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ABSTRACT

Peer Effects, Risk Pooling, and Status Seeking: What Explains Gift Spending Escalation in Rural China?*

It has been widely documented that the poor spend a significant proportion of their income on gifts even at the expense of basic consumption. We test three competing explanations of this phenomenon--peer effect, status concern, and risk pooling--based on a census-type primary household survey in three natural villages in rural China and on detailed household records of gifts received on major occasions. We show that gift-giving behavior is largely influenced by peers in reference groups. Status concern is another key motive for keeping up with the Joneses in extending gifts. In particular, poor families with sons spend more on gift giving in proportion to their income than their rich counterparts, in response to the tightening marriage market. In contrast, risk pooling does not seem to be a key driver of the observed gift-giving patterns. However, we show that large windfall income triggers the escalation of competitive gift-giving behavior.

JEL Classification: D63, D85 and R20
Keywords: ceremony, gift giving, peer effects, risk pooling, social network and status seeking

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Submitted 11 January 2012

"*If friends make gifts, gifts make friends.*" Marshall Sahlins, 1972

1. Introduction

It has been widely documented that many of the poor spend a significant portion of their limited income on social spending, such as splendid funerals (*The Economist* 2007; Mango et al. 2009), extravagant bride-prices and dowries (Rao 1993; Brown 2009), and lavish festivals (Banerjee and Duflo 2007), at the expense of their basic nutrition intake (Subramanian and Deaton 1996; Thomas and Strauss 1997; Chen and Zhang 2010). Peer pressure, status concerns, and risk pooling are three notable explanations for this observed puzzle in the literature.

Many of the poor live in a closely knit community. Their behavior is deeply influenced by their peers in the reference group. Peer effects can generate both positive and negative externality. On the positive side, peer pressure may facilitate technology adoption and social learning (Benabou 1993; Hoxby 2000; Glaeser and Scheinkman 2001; Conley and Udry 2010). However, peer pressure can also induce socially undesirable behavior, such as juvenile delinquency (Haynie 2001). It is therefore likely that one's gift-giving behavior is influenced by peers as well.

Gift giving may also signal wealth and social status. If a higher social status is associated with greater rewards, such as higher likelihood of marriage for offspring, then concerns for status may intensify gift-giving competition. The competitive pressure is especially large for the lower tail of the distribution (Deaton 2001; Watson and McLanahan 2011; Brown, Bulte, and Zhang 2011) because of the unfavorable marriage market conditions for the poor.

Gift-giving behavior has accompanied human beings for thousands of years. Facing various natural and human-made shocks, people have used gift giving as a means of smoothing shocks and mitigating risks. For example, funerals are very costly in many developing countries. It is hard for a family to come by the means to pay funeral expenses by itself. As a result, it is quite common that people extend gifts when attending funerals. The pooled resources can largely defray the funeral expenses. In this

sense, the gift expenditures to others can be regarded as insurance premiums (Rosenzweig 1988; Coate and Ravallion 1993; Townsend 1994). It is likely that risk sharing represents another key motive for gift giving.

Previous studies have investigated the behavior of gift giving from different angles, such as risk sharing (Fafchamps and Gubert 2007) or status concern and peer pressure (Brown, Bulte, and Zhang 2011). In this paper, we attempt to simultaneously disentangle the three factors using a three-wave census-type household panel dataset combined with well-kept gift records for all households in three natural villages in rural China. Meanwhile, we try to improve the empirical identification along all the three dimensions.

Our datasets have several salient features. First, because we have detailed income and expenditure information for all the households in the sampled villages over three periods, we are able to measure relative social status and examine its impact on gift giving along a wide spectrum of income distribution. Second, the complete gift records enable us to match gift givers and recipients, thereby providing us with an effective way to identify the role of risk pooling in gift-giving behavior along several dimensions. Third, the long-term gift records capture the dynamics of gift-giving activity, such as its recent escalation. The large variation in guest composition across occasions circumvents the main identification problems. Fourth, the gift records advance the literature on network formation through gift values, since relationship intensities often matter more to behavior than the connections themselves.

As a preview of the main results, we find that gift-giving behavior is largely influenced by peers in the reference groups. Status concern is another key motive for *keeping up the Joneses* in extending gifts. In particular, poor families with sons spend more on gift giving in proportion to their income than their rich counterparts in response to the increasing marriage market squeeze. In contrast, risk pooling is not a key driver of the observed gift-giving patterns. Moreover, gift giving is largely reciprocal in China. After a small group of people receive unexpected windfall income, for example, they start to extend more generous gifts to others. Others have to follow suit, triggering the escalation of gift expenditure.

This paper is organized as follows. Section 2 documents the patterns of gift giving in rural China; Section 3 discusses the data; Section 4 lays out our basic analytical framework; Section 5 discusses the main issues in peer effect identification and its relevance to our strategy; Section 6 specifies the empirical model; Section 7 presents the main results on the determinants for gift spending and its escalation; finally, Section 8 concludes with further discussion.

2. Gift Giving in Rural China

Gift exchange is commonly practiced in developing countries but rarely documented in the economics literature. Chinese society is largely relationship (*guanxi*) based and gift exchange plays an important role in maintaining *guanxi*. Gift giving is largely reciprocal. One is supposed to pay back previously received gifts later on according to the prevalent "market price" of gift giving.

The analysis of gift giving in rural China is based on our surveyed villages in rural Guizhou (Table 2.1).

Table 2.1—Summary statistics by natural village (2009)

	Village 1	Village 2	Village 3	Total
Total number of households	48	27	80	155
Total population	203	96	295	594
Distance to the county seat (km)	10.0	11.0	2.5	7.8
Per capita cultivated land (mu)	0.87	0.16	1.10	0.71
Share of flat land (%)	40.0	20.7	80.0	53.4
Male head of household (Yes=1; No=0)	93.5	94.8	91.6	92.8
Education of household head (years)	2.87	3.06	3.98	3.44
Minority head of household (Yes=1; No=0)	2.9	90.1	5.9	18.9
Share of household members aged 11–29, unmarried (%)	15.9	15.7	14.7	16.6
Share of household members aged 60 and above (%)	14.2	17.9	12.5	14.1

Source: Authors' survey data for the three natural villages where we collected gift records.

Table 2.2 presents gift expenditure per occasion and the number of guests in coming-of-age ceremonies, weddings (bride's family and groom's family), and funerals over time. The average gift size has increased steadily for all the four occasions, as has the number of guests participating. However, the rising gift size is not sufficient to cover the total expenditures on these events. As shown in Table 2.3 on the total expenditures for the four types of events, the median expenditure for a coming-of-age ceremony is more than 8,000 Chinese yuan renminbi (CNY), while on average the host of such an event receives only CNY 3,782. In other words, the host has to cover more than 54 percent of the expenses out of his own pocket. The gap is even larger for wedding ceremonies among groom families: The amount of gifts received accounted for only 20 percent of total expenditure in 2009.

Table 2.2—Gift spending and sizes of ceremonies (2000–2009, per occasion)

Year	Coming-of-age			Male wedding			Female wedding			Funeral		
	Mean gift (CNY)	Gift SD	Mean # guests	Mean gift (CNY)	Gift SD	Mean # guests	Mean gift (CNY)	Gift SD	Mean # guests	Mean gift (CNY)	Gift SD	Mean # guests
2000–2004	28.8	18.1	35.5	41.7	20.3	31	41.6	21.1	22	23.5	17.2	31
2005	25.1	12.3	34	45.9	27.2	38	-	-	-	28.7	17.4	49
2006	27.6	8.0	41	55.4	29.4	34.3	58.1	24.7	31	21.8	13.3	61.9
2007	46.6	27.8	46	50.5	25.9	40	53.3	24.1	26.3	-	-	-
2008	-	-	-	53.6	34.8	35.5	59.7	29.2	36	83.4	42.1	56
2009	73.3	41.6	51.5	90.6	52.3	37.3	68.4	39.7	45	37.9	23.6	75.5

Source: Authors' gift exchange data from three natural villages.
Notes: All gift values have been adjusted for inflation based on the appropriate year's *China Statistical Yearbook* published by the National Bureau of Statistics (NBS) of China, various issues. "-" means no ceremony occurred during that year.

Table 2.3 Median expenditures (CNY) in organizing major ceremonies (1996–2009)

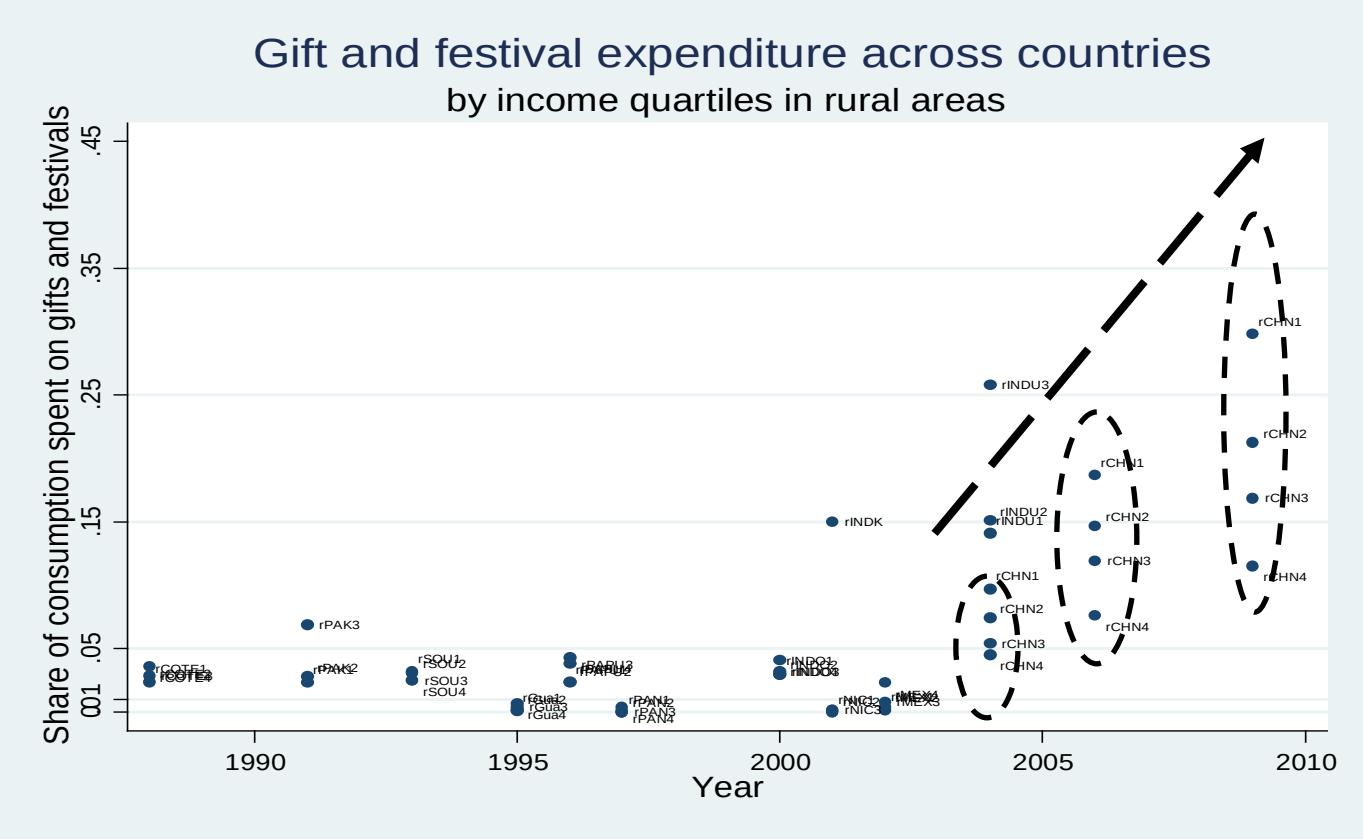
Year	Coming-of-age	Wedding (groom's family)	Wedding (bride's family)	Funeral
1996	-	4,500 (**3.00**)	3,157 (**2.10**)	2,688 (**1.79**)
1997	-	3,852 (**2.84**)	3,100 (**2.29**)	3,471 (**2.56**)
1998	-	5,211 (**3.85**)	3,025 (**2.23**)	3,170 (**2.34**)
1999	-	3,634 (**2.64**)	3,829 (**2.79**)	4,328 (**3.15**)
2000	-	6,250 (**4.85**)	2,929 (**2.27**)	4,393 (**3.41**)
2001	-	7,371 (**5.81**)	5,644 (**4.45**)	3,388 (**2.67**)
2002	-	7,347 (**5.20**)	4,536 (**3.21**)	3,402 (**2.41**)
2003	-	7,891 (**6.22**)	5,143 (**4.05**)	4,655 (**3.67**)
2004	-	10,423 (**8.24**)	4,243 (**3.35**)	6,150 (**4.86**)
2005	3,208 (**1.95**)	9,486 (**5.76**)	7,633 (**4.63**)	5,156 (**3.13**)
2006	3,387 (**2.62**)	11,805 (**9.14**)	7,502 (**5.81**)	6,175 (**4.78**)
2007	4,284 (**2.75**)	8,569 (**5.50**)	4,927 (**3.16**)	8,096 (**5.20**)
2008	8,046 (**5.50**)	13,983 (**9.56**)	5,833 (**3.99**)	7,561 (**5.17**)
2009	8,154 (**5.51**)	15,066 (**10.18**)	7,766 (**5.25**)	7,151 (**4.83**)

Source: Authors' survey data.
Notes: 1. All expenditure amounts have been adjusted for inflation based on the appropriate year's *China Statistical Yearbook* published by the National Bureau of Statistics (NBS) of China, various issues. All values are in CNY. 2. Recall data for coming-of-age ceremonies were collected only since 2005. 3. Numbers in parentheses denote expenditure as proportion of average per capita income in the 18 villages.

Figure 2.1 presents the share of gift expenditure by income quartile over our three-wave survey in China and other countries. The three dashed circles highlight our three-wave surveys. Over time, the share of gift and festival expenditure has increased steadily. There is an increasing spread in the share of gift and festival expenditure

among the income quartiles. The poorer a household, the higher the share of consumption devoted to social spending, and the faster the growth in share of gift and festival expenditure between 2004 and 2009.

Figure 2.1—Cross-country comparison of the share of household social spending (rural)

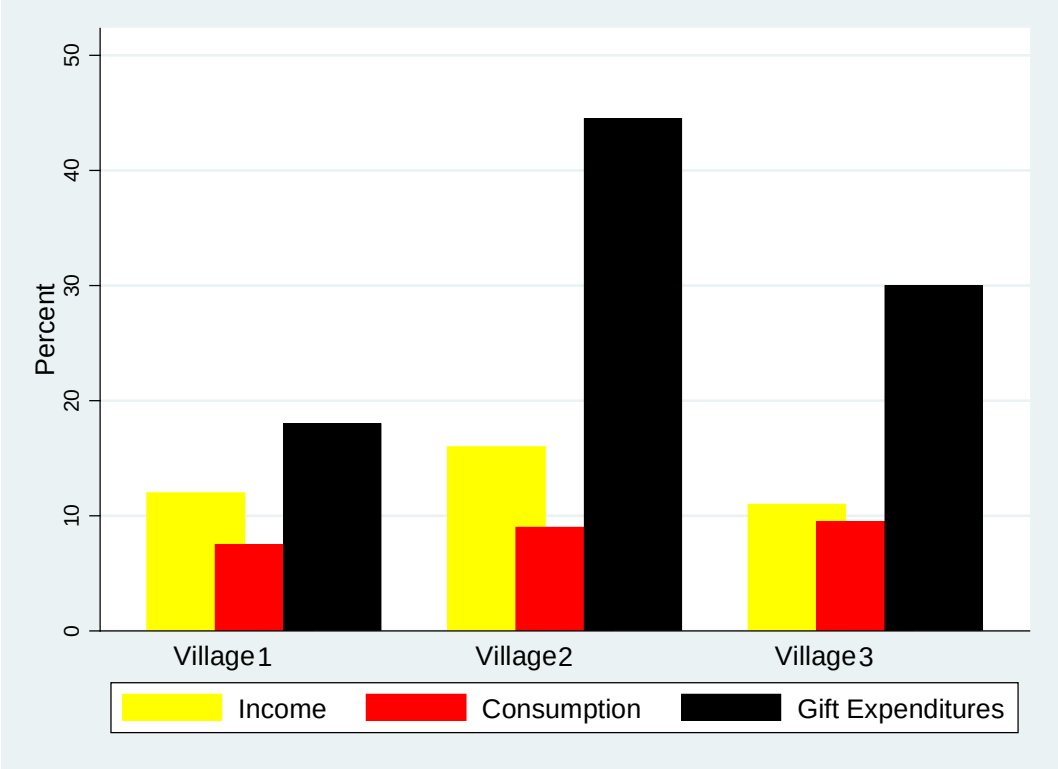


Sources: Banerjee and Duflo 2007; authors' three-wave census data in rural Guizhou; Rao 2001.
Notes: 1. The categorization for rural China (rCHN1, rCHN2, rCHN3, rCHN4) is based on the same four quartiles as other datasets (dollar amounts in U.S. dollars): less than $1 per day (denoted as "1"), $1–$2 per day (denoted as "2"), $4–$6 per day (denoted as "3"), and $6–$10 per day (denoted as "4"). The poverty lines are adjusted according to 2005 purchasing power parity (PPP) rate from http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp .
2. Notation: CHN, China; Gua, Guatemala; INDU, India—Udaipur; INDO, Indonesia; INDK, India—Karnataka; COTE, Côte d'Ivoire; MEX, Mexico; NIC, Nicaragua; PAK, Pakistan; PAN, Panama; PAPU, Papua New Guinea; SOU, South Africa; INDH, India—Hyderabad. "r" denotes rural area.
3. The dashed circle and the arrow show rapid increase in the share of gift and festival expenditure in our three-wave Guizhou survey.

Figure 2.2 plots the annual growth rates of gift spending, consumption, and income over the period 2005–2009. Annual gift growth rates range from 18 percent to 45 percent in three villages, much higher than the 10 percent annual growth rate of per

capita consumption. While the share of expenditures allocated to food dropped from 48 to 42 percent, the share of spending on gifts and festivals soared from 8 percent to 17 percent. Apparently, gift spending escalation is an acute phenomenon in this impoverished region.

Figure 2.2—Annualized growth of (per capita) income, consumption, and gift spending



Source: Gift records data (2005–2009) and three-wave survey data.
Notes: Annualized growth rates have been adjusted for inflation based on *China Statistical Yearbook* issued by the National Bureau of Statistics (NBS) of China, various issues.

3. Data Collection

Three-Wave Census Survey

The household information for this study comes from three waves of census-type household survey conducted by us in 18 selected natural villages in rural Guizhou, China.[1] They are both geographically isolated and ethnically diversified. Local residents know each other well. Most residents' kinship networks are confined to these villages. More than 20 ethnic groups are living in the area, including Han, Miao, Buyi, Gelao, and Yi. In total, ethnic minorities make up about 20 percent of population.

The three rounds of surveys in 2005, 2007, and 2010 cover 801, 833, and 872 households, respectively. The differences in sample size largely reflect demographic changes. All three waves include detailed information on household demographics, income, consumption, and transfers. Transfers include gifts received and extended. Since our analysis uses gift-exchange records from 3 of the 18 villages, only households involved in the social occasions surrounding the recorded gifts are relevant for this study.

Gift-Exchange Records Collection

Rural households usually keep the records of gifts received on major occasions for a long period because they have to pay back accordingly when the gift givers hold a social event (Yan 1996).[2] In the survey area in Guizhou, we find that all the households keep a gift book. In early 2010, we used a digital camera to capture the gifts recorded in the books for major occasions (male family member's wedding, female family member's wedding, funeral, coming-of-age ceremony, child birth ceremony, and house-moving ceremony) during the period 2000–2009 for all the households in 3 natural villages. The 3 natural villages were selected from the 18 natural villages (3 administrative villages) where the three-wave census survey was conducted (Table 2.1). In each administrative

[1] This survey was jointly conducted by the International Food Policy Research Institute (IFPRI), the Chinese Academy of Agricultural Sciences (CAAS), and Guizhou University.

[2] Yan writes, "Ritualized gift giving is also associated with the custom of making and preserving gift lists. Gift lists are homemade books on red paper (funeral gift lists are made on yellow paper) inscribed with a traditional Chinese calligraphy brush. They serve as a formal record of all gifts received by the host of a family ceremony" (1996, page 49).

village, we selected the natural village with mirroring the average development level of the whole administrative village..

A unique Karst landform keeps the 3 villages isolated from the outside society. Among them, village 1 is the most remote (10 kilometers away from the county seat with poor road access), and local customs are well preserved. On the other hand, village 3 is only 2.5 kilometers away from the county seat. It is the most vulnerable to external changes, such as the recent social spending inflation. In between, village 2 is populated by the Buyi ethnic minority, who preserve the Catholic culture and ceremony tradition different from that of the major Han villages (such as villages 1 and 3). In major public ceremonies in village 2, people generally participate in the events (such as Halloween and Christmas) without bearing a huge burden of gift exchange.[3] Since the surveyed villages are populated with Han group and ethnic minorities, we are able to explore social connections between ethnic groups.

Based on the three-wave household surveys in 18 natural villages, we identify 335 households in gift record books, including 160 households from the 3 natural villages where the gift records were collected and 175 households from the other 15 natural villages covered by our large-scale household survey.[4] Once having joined in gift exchanges, most people remain active. A great proportion of previously inactive households become active at the end of each period.

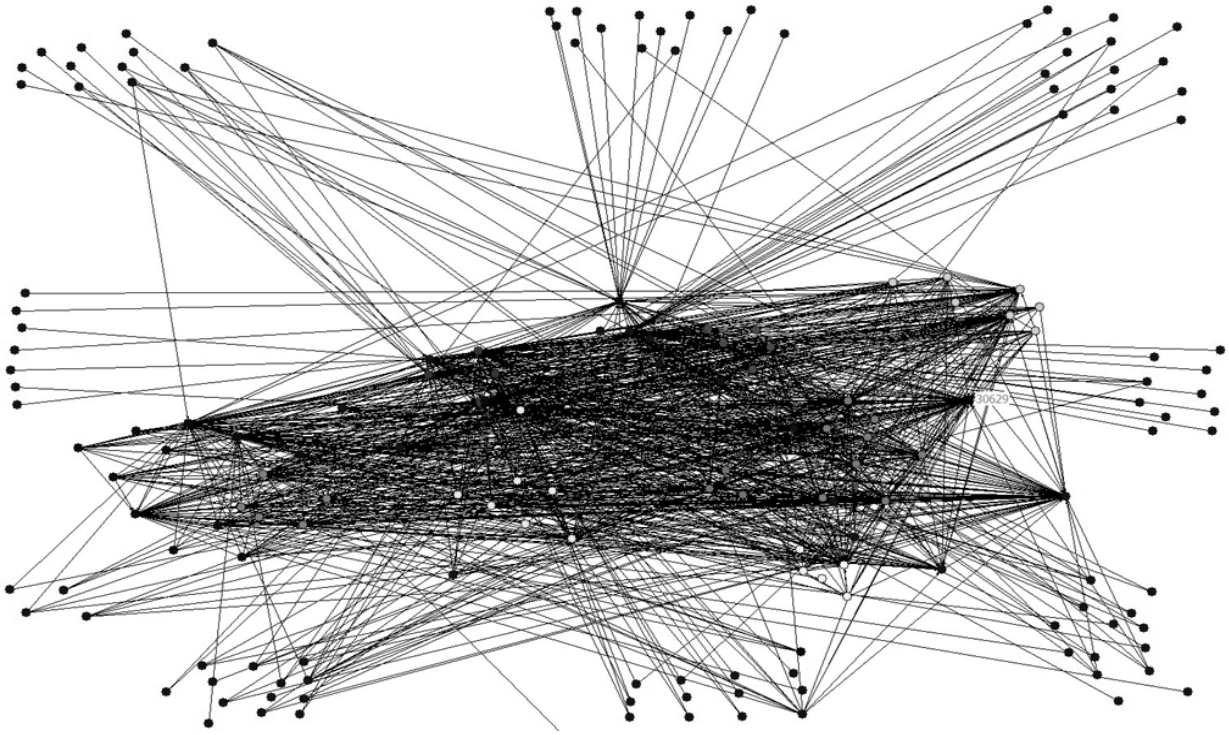
Figure 3.1 shows a map of the gift network in 1 of the 3 villages. In total, 8,074 gift links during the period 2000–2009 are identified. The potential links include all households in the hosts' local villages and the identified links between local villages and the other 15 surveyed villages, whether or not there was a gift given. The assumption is that all households in the same village know each other and are aware of the dates of ceremonies. Given the geographic and local social environment, this is very likely to be the case. Meanwhile, 4,611 cross–township/county gift links among 4,924 potential

[3] A major difference in this aspect between public celebrations in India and household ceremonies in China can be found in Rao (2001) and Chen (2009).

[4] Our census-type survey determines that all households in the eighteen villages, who had presented any gifts to people residing in the three villages in recent years, are identified. Other names, such as those from out of the three administrative villages, are not included in our analysis. .

links were recorded. These potential cross–township/county links included all the recorded cross–township/county links and zero-gift-flow links between the hosts and their bride's-side blood relatives recalled by each household. Every effort was made to identify these potential but nonexistent gifts to circumvent sample attrition and sorting problems during our records collection process. Nearly all households' gift-receiving records for the ceremonies were included in this study, since less than 5 percent of households reported gift book loss or damage.[5]

Figure 3.1—Dyadic links and gift exchange networks



Source: Authors' social network data from one of the three villages.
Note: Dots of the same color show households in the same clan. Dots to the boundaries show households from other villages. The dots (households) are based on actual geographic locations.

If all family members are illiterate, a group of two or three educated relatives usually helps record gift giving on the celebration days. However, names on the records are usually nicknames, which might not offer precise identification of the individual

[5] We consulted on major ceremonies with village leaders and local residents to verify before going to individual families. Meanwhile, this prior information helped households recall and find gift books for us.

involved. To solve this problem, we showed a name list to each household to facilitate their identifying the people represented on the records. We also consulted many local people to help identify the people recorded by their nicknames.

Information on kinship and relatedness among villagers was also collected and matched to each gift link. The information was verified with the help of village leaders, the elderly, and local elites. As do many other rural communities, each of the 3 surveyed villages has several major clans. Taking village 3 in Figure 3.1 as an example, households in the same clan usually live closer to each other for historical reasons. Gift exchanges are more prevalent within a clan than across clans.

4. Risk Pooling and Network Formation: An Analytical Framework

In the literature, most studies tie pairwise link formation to individual decisions. Separability of the utility function is imposed with the assumption that the utility derived from the network is equal to the sum of the utilities brought by each link and that these link-specific utilities are not affected by the structure of the network. Following the conventional setting (De Weerdt 2004; Udry and Conley 2005; Fafchamps and Gubert 2007), we define the existence of a link (L_{ij}) between two nodes of distance d_{ij}. A link is established when the benefit from a link $(B(d_{ij},1)-B(d_{ij},0))$ exceeds its maintenance cost $C(d_{ij})$. Since distance does not explain all aspects of link formation, a residual e_{ij} exists. Specifically,

$$L_{ij}=1 \text{ if } [B(d_{ij},L_{ij}=1)-B(d_{ij},L_{ij}=0)]-C(d_{ij})+e_{ij}>0\,. \quad (1)$$

Social distance d_{ij} involves indicators of multiple dimensions: spatial distance, family characteristics and relatedness, shared activities, and so on. The longer the social distance, the less homogeneous are the shocks, and the more there might be monitoring and enforcement difficulties. Therefore, both the benefit and the cost of link formation should increase with social distance d_{ij}, leading to a trade-off between the scope and ability of mutual insurance in the networks. Thus, the effect of multidimensional social distance on link formation is an empirical question.

First, income pooling should be more effective between households engaged in different activities or occupations, such as, in our context, between farmers and nonfarm migrant workers. A farmer's income is determined by such factors as weather conditions and pest infestation, while the income of a nonfarm migrant worker depends on economic prosperity, which is expected to be uncorrelated with farm income. However, households with different occupations usually have less common ground to socialize with each other.

Second, taking care of children and elderly is a form of risk sharing that differs from income pooling. Young households with children are faced with different health risks than those faced by the elderly; moreover, younger households are more capable of

helping each other than are the elderly. Therefore, households with a large difference in age structure have the potential to insure each other. However, their social interactions might be limited due to differences in lifestyle.

Third, due to the potential inter-household externalities to education, links between the better educated and the less educated are more attractive to the latter than to the former. Likewise, the poor may have stronger motivation to link with the rich than vice versa. On the other hand, rich households might be willing to help poor households who are not able to bear large expenses resulting from shocks and ceremonies. Since link formation is directional and the incentives behind it are asymmetrical, social distance should capture this factor.

Kinship may strengthen link formation inasmuch as it reflects history, norms, and trust in a community. Given a certain geographic closeness, blood relationships facilitate in punishing uncooperative behavior. From a Darwinist's perspective, helping family members is a way to expand the gene pool.

A *level effect* should also be included in framework (1) to explore whether households with certain common characteristics tend to form links. For instance, it is expected that wealthier and better-educated people tend to link to each other, and households with a higher share of elderly or children are less likely to link to each other. The wealth effect is captured by per capita income. Because networks affect the ability to generate income, income is endogenous to the network and thus should be instrumented in the first-stage estimation.[6]

[6] Since one's social network affects the capability of income generation, income is potentially endogenous to the network formation process. Households with better networks may earn higher incomes. Therefore, we instrument per capita income with variables that predate the formation of gift links, including education of the head, size of the head's lineal family, major family productive assets (such as a cow, a horse, and farming machines), inherited land size, number of working members in a household, gender of the head, whether the head is a cadre, and shocks suffered during the year. Since income enters the dyadic regressions in difference and sum, we separately instrument the difference and sum in per capita income (Table A.1). Most instruments have strong predictive power, especially land, cow, relative network size, education, and shocks. Predicted sum and difference in per capita income are used in lieu of actual income in the estimations that follow. Predicted per capita income rather than predicted wealth is used, because it is believed to be more precise than an index of wealth evaluated at subjective prices, especially in this context, where a great proportion of family assets is composed of dated housing.

The framework to this point ignores peer influence in shaping one's link formation decisions, which usually works in the same direction as the risk-pooling motive and may blur the identification. In a traditional rural society, peer influence matters because communities are isolated and people have close relations.

Furthermore, the framework does not clearly consider the role of status. Unlike information networks, networks of gift giving on social occasions help in climbing social ladders and mobilizing resources in the future. The fact that status seeking works in the same direction as risk pooling and peer influence makes its identification important.

5. Peer Effect Identification

Although peer effect has been studied for decades, no consensus has been reached on its significance and magnitude due to criticisms related to identification (Manski 1993; Moffitt 2001; Brock and Durlauf 2001). Even less is known about the mechanisms through which it operates. Three challenges confront peer effect identification: first, the real group within which people interact with each other is a priori unknown; second, correlated effects confound the identification because people usually endogenously form peer groups or are affected by common group characteristics (for example, common shocks in the development literature and teacher effects in studies of education) and thus behave similarly; third, the reflection problem persists because people influence each other in a group, which hinders any judgment on whether a person's action is the cause or the effect of peers' actions.

Reference Groups

The definitions of reference groups vary substantially in the literature, from the most comprehensive, a national population, to the very restrictive, such as a grade cohort. The large variation in the scope of reference groups reflects how hard it is to establish who influences whom a priori.

Most studies do not have that information due to limitations on their data, on their understanding of the specific context and social mechanism, or both. Instead, they assume individuals in the population as potential peers and define peer influence based on average intragroup externality that affects group members identically.[7] However, different time and social constraints among agents suggest that the set of potential partners has large variation, whether or not the population is partitioned.

In our study, identifying the effects of both peer pressure and status seeking on gift giving during social events requires an appropriate definition of the reference group. Peer pressure in sending gifts is most likely to work through information sharing among

[7] Another strategy is to pick at random many sets of potential peers to build a simulated likelihood (Mihaly 2007).

guests attending social events.[8] Therefore, the main reference group for gift spending is defined according to gift presenters on each occasion. We also define reference groups for gift spending based on gift receivers to whom one presents gifts in any given year. A comparison of estimates from the two peer group definitions, fellow gift presenters and gift receivers, informs us of the relative intensity of peer pressure in extending gifts.

Relative status is measured according to the geographic reference group.[9] According to a recent study (Mangyo and Park 2011), geographic reference groups, often at the village level, are salient for rural residents living in close proximity. In rural China, a natural village is evolved over generations. Due further to the local Karst landform that isolates the natural villages in this study from the outside, a natural village is particularly suitable to be treated as a unit for social comparison. As a result, we define the reference group as the natural village for purposes of measuring yearly household-specific social status.

Correlated Effects

Correlated effects may come from two sources: unobservable common shocks and endogenous group formation. To separate correlated effects that confound peer effect identification, some studies use randomly assigned peers (Sacerdote 2001; Zimmerman 2003), some use conditional variance restrictions that disentangle excess variance due to peer effect from that due to group-level sorting (Graham 2008), and others use composition variations of adjacent cohorts within schools to identify peer effect (Hoxby 2000; Gibbons and Telhaj 2008; Ammermueller and Pischke 2009). Similar to the methodology of these latter studies, we identify peer effect through the large variation in the size and composition of guests attending each social event.

[8] Rural residents send gifts to their local events, and information on the gift price is shared. On the day of a ceremony, an educated person is often responsible for keeping the record of gifts received. As a result, the market information on gifts given is largely common knowledge within a village. As shown by comparing kernel density estimates among social events, gift spending at each event tends to cluster.

[9] Ideally, the identification of relative status should follow that of peer effect. However, multiple relative status values appear for a household that gives gifts more than once a year, if fellow gift presenters per event are defined as peers. If gift receivers are defined as peers, missing values appear for a household that sends no gifts in a year.

To tackle the issue of common unobservable shocks, lagged all peers' median gift per occasion is instrumented with lagged new peers' median gift per occasion from brides' out-of-township blood relatives.[10] The longitudinal structure of the data allows us to track each household's previous peers and distinguish between new peers and old peers. On the one hand, the large distance between villages in the mountainous region limits the spread of common shocks and the sharing of information, which mitigates the concern for common unobserved factors. Information sharing is further restricted by the patrilineal culture, whereby fellow villagers attending a male-side ceremony have little connection with the external relatives of the bride. On the other hand, new peers' median gift per occasion is highly correlated with that of all peers by construction. These two relevant features of out-of-township new peers result in a good instrument.

To mitigate the concern for self-selection into gift groups, all fellow villagers and brides' out-of-township blood relatives, whether they present gifts or not, are included in the analysis, since all households in each village know each other well and know about social events due to close local connections spanning generations. Moreover, correlated effects arising from unobserved individual and group effects are taken care of in our fixed-effect estimations. We further control guests' group characteristics to test whether individuals sort themselves into groups according to certain unobservable characteristics or abilities (Broeck and Dercon 2007).

The Reflection Problem

The reflection problem arises when the endogenous effect and exogenous effects are entangled in the identification of peer effect. Since only the endogenous effect can generate a social multiplier with policy implications, studies never give up finding effective solutions. Methods utilized to isolate the two effects include these: instrumenting peers' current behavior with their lagged behavior (Hanushek et al. 2003) or the lagged treatment they received (Boozer and Cacciola 2001), specifying a

[10] The traditional patrilineal culture and land allocation system in rural China determine that most males stay in birth villages, while most females migrate out upon marriage. Since local geographic condition restricts social connections with the outside, most out-of-township new peers are brides' blood relatives.

nonlinear setting (Manski 1993; Brock and Durlauf 2001), designing a partial-population experiment setting that directly affects the behavior of some but not all group members (Bobonis and Finan 2009), and utilizing network information or partially overlapping groups (De Giorgi, Pellizzari, and Redaelli 2010).

In principle, the identification of endogenous effect from contextual effect is made possible when an appropriate exclusion restriction is found whereby an influencing factor of individual outcomes does not directly affect peers' outcomes (Manski 1993). While it is difficult to distinguish a factor's impacts on an individual from its impacts on peers using a standard dataset with perfectly overlapping peer groups, partially overlapping peer groups create direct as well as indirect connection. Ideally, rich information on social networks makes possible a clear identification (Calvó-Armengol, Patacchini, and Zenou 2009; De Giorgi, Pellizzari, and Redaelli 2010; Lin 2010), but our outcome variable—individual gift spending per occasion—raises the concern for duplicated usage of gift information. Therefore, this strategy cannot be applied here.

Nonetheless, the partially overlapping peer groups across social events separate new peers from old peers and out-of-township peers from local peers. As discussed above, gifts from brides' out-of-township blood relatives generally have no direct effect on gift spending from local residents, thereby satisfying the exclusion assumption. In line with the literature, we also take lagged median gifts from fellow gift presenters to break down the reflective influence.

6. Empirical Strategy

Model Specification

Our main empirical estimations are dyadic regressions. In network analysis, a dyad is a pair of agents. Dyadic data contain two types of information: link attributes w_{ij} between nodes i and j, and node attributes z_i and z_j for nodes i and j, respectively. Therefore, the data are normally transformed into level effect ($z_i + z_j$), social distance ($z_i - z_j$), and link attributes w_{ij} to best preserve information.[11] Since gift exchanges are directional, the outcome variable y need not satisfy $y_{ij} = y_{ji}$ for any i and j. Following Fafchamps and Gubert (2007), let

$$y_{i,j,c,t} = \alpha_0 + \alpha_1 m[y_{-i,j,c,t-1}] + \alpha_2(z_{i,t} - z_{j,t}) + \alpha_3(z_{i,t} + z_{j,t}) + \alpha_4 RD_{i,t} + \psi w_{i,j,t} + \gamma_i + \phi_t + \varepsilon_{i,j,c,t}, \quad (2)$$

where -*i* denotes peers of household *i*; $y_{i,j,c,t}$ is the actual gift guest i presents to the host j on occasion c at time t; $w_{i,j,t}$ denotes link attributes between *i* and *j* at time t, such as cross-village or not and blood relations; and $z_{i,t}$ and $z_{j,t}$, respectively, denote attributes of households *i* and *j* at time *t*.

Peer effect α_1 is identified via an instrumental variable (IV) approach. Reference groups for gift spending are defined according to fellow gift presenters per occasion in the main estimations and gift receivers to whom one presents gifts per year in the robustness check. Compared with the methodology of Brown, Bulte, and Zhang (2011), which restricts peer groups at the village boundary, our novel definition of peer group enables us to eliminate correlated effects and contextual effects that would confound peer effect identification.

In the main estimations, lagged median gift spending per occasion from brides' out-of-township blood relatives, whether they sent a gift or not, instruments lagged all peers' median gift to j per occasion c, that is, $m[y_{-i,j,c,t-1}]$. Adopting a nonlinear peer influence setting, that is, lagged median behavior among peers, partially overlapping

[11] Our conditional dyadic fixed effect model assumes conditional independence for consistency, which means that gift-giving decisions are independent from each other and conditional on all explanatory variables and node-specific unobserved factors.

guests across occasions creates exclusion restrictions that mitigate the reflection problem.

Out-of-township peers circumvent the concern for correlated effects that arises from common unobservable shocks. All fellow residents within the village boundaries and brides' out-of-township blood relatives, whether they present gifts or not, are included in the peer group to mitigate concern for self-selection into gift groups.

To test the risk-pooling motive, we combine α_2 and α_3: α_2 identifies social distance effect while α_3 identifies level effect. The two effects are controlled to eliminate the concern that apparent sorting by gift given could be due solely to the similarities in preferences that come from closeness. A set of household factors is included to construct social distance and level effect indicators, including head characteristics (gender, marital status, education, age, and ethnicity), family characteristics (share of youth and elderly, cadre, household size, land size, family assets, number of farm workers, and number of nonfarm workers), and major household shocks (natural disaster, livestock death, and family member death).

However, the link formation framework used by Fafchamps and Gubert (2007) (1 = link exists; 0 = link does not exist) conveys no information on how the intensity of a link is determined. The strength of links in many contexts is what really matters to an individual's well-being. It shows to what extent one can rely on networks when needed, rather than what the mere existence of links could do. Therefore, we substitute the actual gift one presents on an occasion for the existence of a link as the dependent variable.

From the econometric identification perspective, the Fafchamps and Gubert (2007) framework illustrates that low-degree variation hinders the effort to reliably identify determinants of more links, that is, the level effect α_3, since the degree for a directional link from i to j is either 0 or 1. Combined with the dependence of dyadic observations, the issue is that joint likelihood of the sample cannot be decomposed into a product of single observation likelihoods. However, link intensity based on gift amounts provides much larger variation. Therefore, a linear dyadic model of gift spending per occasion is

estimated to circumvent the issue of indecomposable dependent dyadic observation likelihoods.

Relative status $RD_{i,t}$ is measured via defining natural villages as peer groups. It is captured by the individual-specific Deaton relative deprivation index (Deaton 2001), the normalized difference between the average income of those with higher income and an income level x weighted by the proportion of those with income higher than the corresponding individual i. Its value lies between 0 and 1. The more relatively deprived, the higher the value.[12] The identified impact is denoted by α_4. This is an improvement over the method of Brown, Bulte, and Zhang (2011), which uses community-specific distributional indicators to measure status seeking.

The main specification (2), however, does not directly account for the recent gift escalation. Manipulating the dyadic observations to difference between each pair of households with zero and nonzero gift exchanges,[13] the pairwise difference model (3) investigates how the incremental gift spending can be interpreted as influenced by three major factors: risk sharing, *changes in* status, and *changes in* peer influence. The pairwise difference model removes the unobserved pair heterogeneity:

$$\Delta y_{i,j,t} = \alpha_1 \Delta m[y_{-i,j,t-1}] + \alpha_2 (z_{i,t} - z_{j,t}) + \alpha_3 (z_{i,t} + z_{j,t}) + \alpha_4 \Delta RD_{i,t} + \Delta \varepsilon_{i,j,t} . \qquad (3)$$

To check whether peer effect is robust to more IVs, we keep out-of-township peers' median gifts and additionally follow the strategy of De Weerdt and Dercon (2006), which uses changes in peers' windfall income and remittance to instrument changes in peers' median spending per occasion. Changes in peers' windfall income directly affect changes in peers' gift spending and exert only indirect impact on one's gift spending growth via peer influence.

Dependence of Dyadic Observations

Due to the presence of node-specific characteristics common to all links containing that node, dyadic links are not independent. The nonindependence feature can be

[12] For a detailed review of a series of relative deprivation measures, see Chen and Zhang (2011).
[13] We restrict our analysis to dyadic links between households that once held social occasions.

expressed as $E(\varepsilon_{i,j},\varepsilon_{i,k})\neq 0$, $E(\varepsilon_{i,j},\varepsilon_{k,i})\neq 0$, $E(\varepsilon_{i,j},\varepsilon_{k,j})\neq 0$, and $E(\varepsilon_{i,j},\varepsilon_{j,k})\neq 0$ for all k. Conventional ordinary least squares estimation generates consistent coefficient estimates but inconsistent standard errors. Monte Carlo simulations show that the corrected standard errors can be much larger, especially when the average links per nodes is large (Fafchamps and Gubert 2007).

Three general categories of approaches have been utilized to tackle the dependence of dyadic observations. The first category is to run the generalized least squares estimation while assuming some form for the covariance matrix. However, the method has not been as thoroughly worked out as panel data (Simpson 2001).

The second category of approaches is to correct for the understated dyadic p-values or standard errors. The conventional method has one dimension to be clustered, while for dyadic data we need to simultaneously cluster two dimensions, gift presenters and gift receivers. Three corresponding methods are developed in this category. First, a multiway clustering method is developed to allow arbitrary heteroskedasticity and intragroup correlation in distinct non-nested categories (Cameron, Gelbach, and Miller 2011; Thompson 2009). Though applied in some settings with $E(\varepsilon_{i,j},\varepsilon_{i,k})\neq 0$ or $E(\varepsilon_{i,j},\varepsilon_{k,j})\neq 0$, the clustering does not consider the cases when $E(\varepsilon_{i,j},\varepsilon_{k,i})\neq 0$ or $E(\varepsilon_{i,j},\varepsilon_{j,k})\neq 0$. A second method, quadratic assignment procedure (QAP), is widely utilized in the sociology literature. QAP uses permutation methods to adjust p-values, but it relies on bootstrapping (Simpson 2001; Santos and Barrett 2010). The third method in this category, that of Fafchamps and Gubert (2007), corrects dyadic standard errors due to the cross-observation correlation in error terms involving certain individuals. It thereby more thoroughly adjusts for dependence of dyadic observations.

The third category uses individual fixed effect to purge out the unobserved attributes (De Weerdt 2004; Udry and Conley 2005). For the dyadic data, the dyadic fixed-effect model involves putting in a dummy variable for each gift presenter and gift receiver. However, a large set of dummies often leads to inefficiency or substantive parameters without estimation when the covariate does not vary much along a dimension. Meanwhile, the fixed-effect model may not handle some forms of correlated

errors (Thompson 2009). Another limitation with dyadic fixed effects is that they limit the set of covariates that can be included due to collinearity. Fortunately, the long-term network records and dispersed gift spending along both dimensions allow us to identify the parameters with a large set of dummies.

Though all the three methods are effective in their own ways, there still is an assumption that the error terms of two dyads containing no mutual members are uncorrelated. We relax this assumption in the robustness check through clustering the observations by time periods. Results, not shown here to save space, indicate that this affects only standard errors, not inference.

In this paper, we estimate dyadic regressions across all possible dyads using De Weerdt dyadic fixed-effect correction (De Weerdt 2004), Fafchamps-Gubert (FG) standard error correction (Fafchamps and Gubert 2007), and QAP (Simpson 2001). The absence of some dyadic observations is perfectly predicted by a household's never holding any ceremonies in the past few years, two households' not knowing each other across villages, or both. Therefore, there is no point including those pairs in the estimation. All estimations are based on an $N \text{ x } N$ square adjacency matrix composed of (potential) pairwise connections among event organizers. Through this survey design, square adjacent matrices are built.[14]

To implement the De Weerdt dyadic fixed-effect correction, a set of dummy variables is introduced, one for each household in the sample indicating whether that household is involved in a pair. Every row of the data contains two dummies equal one. Combined with the observable attribute variables, the set of dummies controls the unobserved attributes left in the error term.

The FG standard error correction uses the following formula to correct the covariance matrix for the coefficient estimates β. N denotes number of dyadic observations and K is the number of regressors. X is the matrix of all regressors and X_{ij} is the vector of regressors for dyadic observation *ij*. We have $m_{ijkl} = 1$ if $i = k$, $j = l$,

[14] This strategy is consistent with the standard social network survey that asks respondents to identify a list of other households on which they could rely in case of need or to whom they give help when called upon to do so.

$i = l$, or $j = k$, and 0 otherwise. The FG method should be implemented on an N x N square adjacency matrix.

$$Var(\hat{\beta}) = \frac{1}{N-K}(X'X)^{-1}(\sum_{i=1}^{N}\sum_{j=1}^{N}\sum_{k=1}^{N}\sum_{l=1}^{N}\frac{m_{ijkl}}{2N}X_{ij}u_{ij}u_{kl}'X_{kl})(X'X)^{-1}. \quad (4)$$

To implement QAP, the dependent variable is permuted and merged back with the independent variables. During repeated permutations, values sharing a row or column in the original data will share a row or column in the permuted data. Therefore, we preserve any dependence among elements of the same row or column but eliminate any relationship between the dependent variable and the independent variables. Then we run the estimation with the new merged dataset and repeat the permutation and estimation to generate an empirical sampling distribution. If the actual coefficient is at an extreme percentile of the distribution under the null, we can reject the null hypothesis.

7. Empirical Results

Determinants for Gift Spending per Occasion

We first attempt to explore factors for gift exchanges. In Table 7.1, three standard error corrections are adopted in the dyadic estimation of determinants for gift spending. Regression 1 adjusts for dyadic standard errors according to FG, regression 2 reports QAP adjusted p-value, and regression 3 presents results from the De Weerdt dyadic fixed-effect estimations.

Table 7.1—Dyadic regression on gift expenditure per occasion

	R1		R2		R3	
	FG SE correction		Quadratic Assignment Procedure (p-value)		De Weerdt SE correction	
Social distances (def(Zi , Zj))						
Cumulated shocks	-0.079**	(0.04)	-0.076	(0.13)	-0.130	(0.09)
Head minority status	-0.061	(0.06)	-0.022	(0.43)	2.026**	(1.01)
Household size	0.022	(0.02)	0.012	(0.36)	-0.063	(0.09)
Number of farm workers	0.047	(0.04)	0.031	(0.25)	0.081	(0.17)
Number of nonfarm workers	0.007	(0.02)	0.018	(0.34)	-0.026	(0.08)
Head education	-0.005	(0.01)	-0.008	(0.33)	-0.043	(0.03)
Head gender	0.019	(0.08)	0.053	(0.41)	1.823	(1.37)
Cadre	-0.055	(0.08)	-0.021	(0.43)	-0.237	(0.23)
Head marital status	0.147*	(0.08)	0.113	(0.24)	-0.062	(0.32)
Head age	0.016***	(0.00)	0.015***	(0.00)	0.071*	(0.04)
Share of elderly	-0.315***	(0.11)	-0.294	(0.12)	-1.082**	(0.47)
Share of unmarried sons	-0.097	(0.08)	-0.081	(0.29)	-0.130	(0.31)
Per capita income (predicted, log)	0.248***	(0.04)	0.260***	(0.00)	0.246***	(0.04)
Level effect (sum(Zi , Zj))						
Cumulated shocks	-0.040	(0.03)	-0.050	(0.28)	0.089	(0.07)
Head minority status	0.014	(0.06)	0.030	(0.44)	-0.453	(0.86)
Household size	0.099***	(0.02)	0.093***	(0.01)	0.100	(0.08)
Number of farm workers	0.067*	(0.04)	0.037	(0.24)	0.021	(0.06)
Number of nonfarm workers	0.009	(0.02)	0.029	(0.32)	-0.125*	(0.08)
Head education	0.011	(0.01)	0.016	(0.23)	0.051	(0.03)
Head gender	-0.077	(0.08)	-0.071	(0.36)	-2.276	(1.39)
Cadre	0.321***	(0.08)	0.334**	(0.02)	0.293	(0.23)
Head marital status	-0.075	(0.08)	-0.110	(0.27)	-0.630**	(0.31)
Head age	-0.005*	(0.00)	-0.005	(0.18)	-0.047	(0.04)
Share of elderly	0.494***	(0.11)	0.489**	(0.03)	0.420	(0.49)
Share of unmarried sons	0.215***	(0.07)	0.212	(0.13)	0.309	(0.30)
Per capita income (predicted, log)	0.495***	(0.06)	0.470***	(0.00)	0.804***	(0.11)
Link attributes						
Lineal relatives or not	1.578***	(0.12)	1.706***	(0.00)	1.566***	(0.13)
Across villages or not	-1.938***	(0.10)	-1.814***	(0.00)	-1.761***	(0.11)

Peer influence						
Peers' median gift (per occasion, lag, log)	0.262**	(0.12)	0.263**	(0.05)	0.455*	(0.27)
Status seeking						
Deaton relative deprivation	0.135	(0.13)	0.567**	(0.05)	0.257	(0.31)
R-square / N	0.44 / 3,136		0.47 / 3,136		0.55 / 3,136	

Source: Gift records data and three-wave survey data.
Notes: Dyadic standard errors are reported in R1 and R3, and QAP p-values are reported in R2.
* significant at 10%; ** significant at 5%; *** significant at 1%. Village and year fixed effects are controlled.

We find incomplete risk pooling. The estimation in regression 1 shows that households do not purposefully insure along occupation or education, but they do significantly insure each other along income profile and against shocks. Younger families send more gifts to households with senior members.[15] Level effects show more intense gifts between cadres and richer households. Families with unmarried sons are motivated to link to each other in exchange for insurance against large expenses on future weddings. Gift giving is more intense between lineal relatives. Given a lineal relative relationship, we find significantly less gift spending per occasion across villages, suggesting that intra-village social links are valuable. It also means that monitoring and enforcement difficulties dominate the concern with risk pooling.[16, 17] Regressions 2 and 3 present similar results on risk sharing. The differences lie in insignificant insurance against shocks.

Peer influence is salient. Regressions 1–3 show that a 1 percent increase in peers' gift spending leads to an increase in gift giving per occasion by 0.26 percent, 0.26 percent, and 0.46 percent, respectively. The FG and QAP methods demonstrate very similar results that are consistent with the experience of Fafchamps and Gubert (2007) and of Santos and Barrett (2010).

[15] Unlike other studies using household head age, our family demographic structure indicators in terms of share of elderly and share of unmarried sons are controlled. Our structure more directly captures potential complements in taking care of the elderly and insuring against lump-sum wedding expenditure for an unmarried son, respectively.
[16] Our estimation of geographic proximity might be more reliable than that of Fafchamps and Gubert (2007), since variations in geographic distance are larger in our dataset, capturing numbers of cross-village links, while this type of link is absent in Fafchamps and Gubert.
[17] There is a concern that households may self-select into a neighborhood. However, the historically evolved locality of farmland in rural China prevents endogenous household placement. See Figure 3.1 for the typical pattern of household geographic clustering based on inherited farmland in each clan.

Status seeking weakly determines more intense gift spending for the lower tail of the distribution. For regressions 1–3, the lowest-ranked households spend 13.5 percent, 56.7 percent, and 25.7 percent more, respectively, on gift giving per occasion than do top households.

Determinants for Changes in Gift Spending per Occasion

Having presented the determinants for gift spending on an occasion, we now explore the main issue—driving forces behind the recent escalation in gift spending. The estimation methods in regressions 1–3 in Table 7.2 correspond to those of regressions 1–3 in Table 7.1, respectively.

Table 7.2—Pairwise dyadic regression on *changes in* gift expenditure per occasion

	R1		R2		R3	
	FG SE correction		Quadratic Assignment Procedure (*p-value*)		De Weerdt SE correction	
Social distances (def(Zi , Zj))						
Cumulated shocks	-0.146**	(0.07)	-0.060	(0.21)	0.604***	(0.20)
Head minority status	0.214***	(0.04)	0.119*	(0.05)	-1.992***	(0.64)
Household size	0.019	(0.02)	0.015	(0.25)	0.037	(0.06)
Number of farm workers	0.012	(0.01)	0.010	(0.32)	0.014	(0.02)
Number of nonfarm workers	0.002	(0.02)	0.003	(0.48)	0.084*	(0.05)
Head education	-0.006	(0.01)	-0.002	(0.44)	-0.026	(0.03)
Head gender	-0.021	(0.07)	-0.009	(0.47)	-4.901**	(1.88)
Cadre	0.248***	(0.09)	0.098	(0.14)	-0.115	(0.24)
Head marital status	0.091	(0.06)	0.039	(0.33)	0.045	(0.20)
Head age	0.003	(0.00)	0.001	(0.35)	-0.274***	(0.09)
Share of elderly	0.027	(0.11)	0.060	(0.32)	0.185	(0.59)
Share of unmarried sons	-0.182**	(0.08)	-0.093	(0.16)	-0.134	(0.35)
Per capita income (pred, log)	0.199	(0.15)	0.070	(0.31)	-1.137***	(0.37)
Level effect (sum(Zi , Zj))						
Cumulated shocks	-0.017	(0.03)	-0.002	(0.50)	0.038	(0.05)
Head minority status	-0.170***	(0.04)	-0.078	(0.11)	-4.304***	(1.57)
Household size	-0.052***	(0.02)	-0.024*	(0.08)	-0.016	(0.06)
Number of farm workers	0.031*	(0.02)	0.031	(0.23)	0.025	(0.02)
Number of nonfarm workers	-0.036**	(0.02)	-0.019	(0.17)	-0.072*	(0.04)
Head education	0.017**	(0.01)	0.011*	(0.08)	0.038	(0.03)
Head gender	-0.151**	(0.06)	-0.085	(0.15)	-4.213***	(1.20)
Cadre	-0.221***	(0.07)	-0.104*	(0.07)	0.112	(0.15)
Head marital status	0.079	(0.05)	0.045	(0.30)	-0.123	(0.23)
Head age	-0.001	(0.00)	-0.001	(0.46)	-0.040*	(0.02)
Share of elderly	0.208**	(0.10)	0.143	(0.14)	1.078**	(0.48)
Share of unmarried sons	0.162***	(0.06)	0.095	(0.12)	0.512**	(0.23)

Per capita income (pred, log)	0.010	(0.05)	-0.011	(0.36)	0.210***	(0.07)
Change in peer influence						
Peers' median gift (per occasion, lag, log)	0.698***	(0.15)	0.717***	(0.00)	0.506***	(0.14)
Change in status seeking						
Deaton relative deprivation	0.750***	(0.27)	0.845***	(0.00)	0.821***	(0.26)
R-square / N	0.18 / 3,136		0.11 / 3,136		0.24 / 3,136	

Source: Gift records data and three-wave survey data.
Notes: Dyadic standard errors are reported in R1 and R3, and QAP p-values are reported in R2.
* significant at 10%; ** significant at 5%; *** significant at 1%. Village and year fixed effects are controlled.

Different from gift giving itself, the evidence for risk pooling through gift spending *escalation* is largely insignificant. We find risk sharing responding to shocks only in regression 1. Health and weather shock smoothing and income pooling are even of the opposite sign in regression 3, suggesting that poorer households suffering from more shocks purposefully connect with richer counterparts through rapidly growing gifts. Under regressions 1 and 3, gift spending among families with unmarried sons or senior members experiences a higher increase. Throughout the three scenarios we do not observe gift escalation caused by risk sharing across occupations.

The marginal peer effect is much larger in promoting gift escalation than in explaining gift spending itself. A 1 percent growth in peers' gift spending increases own gift expenditure per occasion by 0.70 percent under FG correction, 0.72 percent under QAP, and 0.51 percent under De Weerdt correction.

Being more deprived in social ladders boosts gift spending growth. A 1-point increase in the Deaton relative deprivation index, that is, from the bottom to the top in the distribution, causes a 75 percent higher increase in gift spending per occasion under FG correction, an 85 percent higher increase under QAP estimation, and an 82 percent higher increase under De Weerdt correction. Compared with its weak impact on gift giving, the rapid increase in gifts is well explained by the motive to improve relative standing.

Following the IV strategy in De Weerdt and Dercon (2006), we further add changes in peers' windfall income and remittance to instrument changes in peers' median gift per occasion and conduct four robustness checks (Table 7.3). Windfall income in our

context includes two exogenous sources: resettlement subsidy targeting dilapidated houses and vulnerable habitats, and land acquisitions subsidy due to urbanized projects near the local county seat (Table A.2). Both sources of income survive the test of their association with observable family characteristics (Table A.3), which suggests that they are largely random to household characteristics. To mitigate endogeneity that drives the effect of remittance on gift giving, remittance is restricted to that sent from household members who migrated at least two years ago.

Table 7.3—Pairwise dyadic regression on *changes in* gift expenditure with more IVs
(*Changes in* peers' windfall income, *changes in* remittance, and *changes in* out-of-township median gift per occasion as IVs)

	Marginal effect	Standard error
Pairwise dyadic regression—second stage		
1.Pairwise difference model (under FG standard error correction)		
Δ Peers' median gift (per occasion, lag, log)	0.749***	(0.15)
Δ Deaton relative deprivation	0.747***	(0.27)
2. Pairwise difference model (under Quadratic Assignment Procedure)		
Δ Peers' median gift (per occasion, lag, log)	0.778***	(0.00)
Δ Deaton relative deprivation	0.840***	(0.00)
3. Pairwise difference model (under De Weerdt standard error correction)		
Δ Peers' median gift (per occasion, lag, log)	0.548***	(0.14)
Δ Deaton relative deprivation	0.761***	(0.26)
Pairwise dyadic regression—first stage		
1st stage: Δ out-of-township median gift (per occasion, lag, log)	0.687***	(0.02)
Δ peers' windfall income (lag, log)	0.016**	(0.01)
Δ peers' remittance (lag, log)	0.007	(0.02)
F-statistic for joint significance	19.28	
p-value for Hansen j-statistic	-	
Household fixed-effect regression—second stage		
4. Household first-difference model (DV: average gift per occasion in each year; gift receivers as peers)		
Δ Peers' median gift (per occasion, lag, log)	0.363***	(0.09)
Δ Deaton relative deprivation	0.465**	(0.24)
Household fixed-effect regression—first stage		
Δ peers' windfall income (lag, log)	0.210***	(0.04)
Δ peers' remittance (lag, log)	0.361***	(0.07)
F-statistic for joint significance	14.90	
p-value for Hansen j-statistic	0.41	

Source: Gift records data and three-wave survey data.
Notes: 1. Scenarios 1 and 3 in the second stage report dyadic standard errors. Scenario 2 in the first stage reports QAP p-values. Scenario 4 reports robust standard errors. 2. * significant at 10%; ** significant at 5%; *** significant at 1%. 3. The previous IV—*changes in* out-of-township peers' median gift spending per occasion—is utilized. Meanwhile, two additional IVs are used, *changes in* peers' windfall income and

changes in peers' remittance. The instrumental variables strategy follows De Weerdt and Dercon (2006). We adopt a more exogenous remittance definition that includes only family members who migrated at least two years ago. 4. The organization of the observations by household and year in the household fixed-effect estimation (scenario 4) prohibits us from identifying out-of-township peers' median gift spending pending per occasion. Therefore, it is dropped from the IV list.

The F-statistic for the first-stage estimations demonstrates that the IVs have large predicting power, while the p-values for the Hansen j-statistic suggest that the instruments are not overindentified. All four estimations on changes in gift expenditure with these IVs confirm peer effect and status seeking.

First, pairwise difference models are estimated with these IVs. The identified marginal peer effects are 0.75 under FG correction, 0.78 under QAP, and 0.55 under De Weerdt correction. The identified status-seeking effects are 0.75 under FG correction, 0.84 under QAP, and 0.76 under De Weerdt correction. All identified peer effects and status seeking are of high significance.

Second, instead of defining one's fellow gift presenters in each social event as peers, we identify peers as a set of gift receivers for each household over a year.[18] We conclude that peer pressure in extending gifts comes from both fellow ceremony guests and event organizers, the former dominating the latter with regard to the marginal effect. The identified peer effect is 0.36, closer to that of the De Weerdt scenario. The status-seeking effect is 0.47, which is smaller than that of any of the three pairwise dyadic regressions.

In the first-stage estimations for both pairwise dyadic regression and household fixed-effect regression, changes in peers' median windfall income significantly predict changes in peers' median gift per occasion, while remittance demonstrates significant impact in the household fixed-effect model. There is no windfall income-sharing mechanism in the 18 villages. Therefore, changes in peers' windfall income should exert only indirect impact on own gift growth via peers' gift expenditure and its influence over

[18] The median values are taken for a set of own gift-sending links per year (the left-hand side) and a set of all peers' gift-sending links per year (the right-hand side). The resulting dataset has one observation for each household per year, and a household fixed-effect model is estimated that regresses median own gift spending per occasion within each year on median peers' gift spending per occasion. This model eliminates the household unobserved factor(s) that may result in inconsistent estimation of peer effect.

own gift spending, generating a spillover effect. The resettlement subsidy and land acquisitions subsidy are supposed to fulfill specific objectives. However, gift spending seems to be very responsive to these income sources, possibly due to the wealth effect that triggers gift escalation.

Rapid economic development in rural China continues to bring large windfall income opportunities, and at the same time rising wages in recent years may be increasing remittance. If these incomes are unevenly distributed, it is very likely that gift expense escalation spills over within communities, exerting a disproportionate impact on the poor.

8. Concluding Remarks

Lavish household social spending has been widely observed in rural China. This paper studies an impoverished context wherein people spend heavily on gifts at the expense of basic consumption. Complementary to the literature that studies the determinants of total household social spending, we stick to the micro foundations of the behavior—how own gift spending for an event responds to relative status, peer influence, and risk sharing. We present estimates for the separate effects of each of these factors on gift giving.

Our results confirm the prevalence of peer influence and status-seeking motivation in shaping gift spending escalation. The two effects persist upon applying different dyadic standard error corrections, adopting alternative IVs, changing reference groups from fellow ceremony guests to event organizers, controlling group characteristics that may correlate with network formation and own gift giving, and clustering by year to further deal with link dependence.

The risk-sharing effect on gift giving is consistently observed only via income pooling, but it is not evident via occupation diversification, education, shock smoothing, and so on. Moreover, none of the above social distances accounts for the recent gift escalation. One standard interpretation is that network maintenance cost in some dimensions is too high to sustain.

Gift spending during social events is associated with status awards. Therefore, we observe that lower-ranked households are more motivated to invest in gifts. In particular, households with unmarried sons tend to extend more gifts. Considering the finding that part of the effect is captured by the status-seeking factor (Watson and McLanahan 2011), the evidence becomes more salient. This is hardly surprising when the marriage market in China is tightening and favorable to girls. The pressure to build bigger houses, bid up bride-prices, and throw larger wedding banquets to improve their sons' likelihood of marriage drives households with sons to invest early in the market.

The capability and motive for gift giving is amplified by massive windfall income and other opportunities amid the rapid development in China. Though received by only

some households, their effects spill over to peers and contribute to the escalation in gift expenditure. For instance, the passing of the Lewis turning point means significantly rising wages in the labor market (Zhang, Yang, and Wang 2011), which coincides with the inflating cost of ceremonies. Meanwhile, official subsidies have been implemented over the past five years, such as direct grain subsidy since 2005 and a lumpy land acquisitions subsidy due to the accelerating urbanization process in rural China. The challenge is to minimize the negative externalities caused by peer influence over gift giving and to promote more effective risk pooling for the poor on social occasions.

Appendix A: Supplementary Tables

Table A.1—Instrumenting income

	Sum of per capita income	Difference in per capita income
	All regressors as sums	All regressors as differences
Land (mu)	0.02***	0.02**
	(0.00)	(0.01)
Machine (dummy)	-0.23***	0.09
	(0.06)	(0.18)
Cow (#)	0.05***	0.11***
	(0.01)	(0.03)
Horse (#)	-0.06	0.06
	(0.04)	(0.13)
Hhsize (# members)	-0.07***	-0.15***
	(0.01)	(0.02)
Network size (# lineal relatives, log)	1.22***	0.13
	(0.20)	(0.61)
Education (years)	0.01**	0.08***
	(0.01)	(0.02)
Sex (dummy)	-0.16***	0.31**
	(0.05)	(0.15)
Cadre (dummy)	-0.04	-0.49***
	(0.04)	(0.12)
Shocks (# times)	-0.19***	-0.14***
	(0.01)	(0.04)
Year dummies	Y	Y
Village dummies	Y	Y
R-square	0.83	0.45
N	3,136	3,136

Source: Gift records data and three-wave survey data.

Notes: Dyadic standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.2—Summary statistics for windfall income and nonearned income

Year	Mean*	Median*	SD*	N*
	Direct grain subsidy (targeting grain-growing area)			
2004	-	-	-	-
2006	24.67857	20.5	9.81	14
2009	120.5333	90	62.57	105
	Remittance (from hh members who migrated at least 2 years ago)			
2004	1,385.588	980	686.47	34
2006	3,357.313	2,000	1,685.53	67
2009	3,635.147	3,000	2,656.85	68
	Resettlement subsidy (targeting dilapidated houses and vulnerable habitats)			
2004	-	-	-	-
2006	441.1692	396	321.01	13
2009	902.5333	600	678.51	15
	Land acquisitions subsidy (targeting hhs involved in projects near county seat)			
2004	-	-	-	-
2006	8896	10,000	5,548.74	5
2009	60,147.5	55,000	35,341.32	18

Source: Gift records data and three-wave survey data.

Notes: * households who received the specific subsidies or remittances. "-" denotes no occurrence.

Table A.3—Windfall income and family characteristics

	1	2	3	4
	Resettlement subsidy (logit)		Land acquisitions subsidy (logit)	
Network size (# lineal relatives, log)	0.00	0.01	-0.09	-0.07
	(1.00)	(0.77)	(0.54)	(0.50)
Hhsize (# members)	0.02	0.02	0.40	0.40
	(0.93)	(0.90)	(0.45)	(0.31)
Share of migrants	-1.08	-0.76	1.81	3.62
	(0.45)	(0.58)	(0.52)	(0.24)
Sex (dummy)	-1.00	-0.91	-0.72	-0.65
	(0.18)	(0.21)	(0.49)	(0.23)
Minority (dummy)	-0.54	-0.21	-1.21	0.73
	(0.46)	(0.67)	(0.35)	(0.41)
Education (years)	-0.02	0.00	-0.07	0.26
	(0.84)	(0.95)	(0.82)	(0.17)
Cadre (dummy)	0.69	0.62	0.31	0.42
	(0.26)	(0.30)	(0.22)	(0.24)
Age (year)	0.04	0.03	0.22	0.15*
	(0.11)	(0.26)	(0.12)	(0.06)
Share of the elderly	-1.75	-0.50	-5.24	0.26
	(0.19)	(0.67)	(0.36)	(0.93)
Share of youth	0.54	2.22**	-0.03	0.76
	(0.61)	(0.02)	(0.99)	(0.81)
Land (mu)	-0.01	-0.04	0.28	-0.01
	(0.85)	(0.56)	(0.24)	(0.96)
Cow (#)	0.02	0.16	-1.66	-0.02
	(0.95)	(0.55)	(0.19)	(0.98)
Horse (#)	-0.01	-0.14	-0.21	-0.32
	(0.99)	(0.88)	(0.36)	(0.71)
Shocks (# times)	-0.40	-0.25	-0.01	-0.01
	(0.54)	(0.70)	(0.99)	(1.00)
Year fixed effect	Y	N	Y	N
Village fixed effect	Y	N	Y	N
Pseudo R-square	0.157	0.077	0.379	0.245
N	616	616	607	609

Source: Gift records data and three-wave survey data.

Notes: Resettlement subsidy targets dilapidated houses and habitats vulnerable to natural disaster. Land acquisitions subsidy targets households affected by public construction projects near the local county seat.

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