Out of the Network: Migration and the Decay of Relational Society

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Abstract

The demand for support from the local social network may decline when network members have access to other risk-sharing technologies, such as out-migration. We study changes in households' participation in local social networks in response to relaxed migration restrictions in the context of China. Using a panel of households from 2010 to 2016, we find that regional-level increased access to out-migration led to a decline in expenditures in cash gifts at social events, especially for households in rural areas. The decline in cash gifts reduces risk sharing across all households, but out-migration mitigates this effect for households with migrants.

Keywords: Social Network, Gift Exchanges, Migration Policy, Risk Sharing.
JEL codes: Z13, O15, O17, D13, D91.

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1 Introduction

People in developing countries rely heavily on the support provided by their local social network for risk sharing (Townsend 1994; Udry 1994), and it can be costly to participate in the network (Duflo and Banerjee 2011; Munshi and Rosenzweig 2016; Bulte et al. 2018). However, when they have access to external markets, their demand for such support may decline. For example, suppose part of the household migrates to urban areas, migrants may have uncorrelated income shocks in the urban areas and provide within-household risk-sharing (Morten 2019; Meghir et al. 2022). In that case, the household may shift its expenditure on the investment in the local social network to other activities, and such changes in expenditure patterns can have distributive effects within a household and across households previously in the same network.

In this paper, we study how internal migration policy changes in urban areas lead to a decline in the share of expenditure on cash gift contributions in social events in origin regions, through increases in rural-to-urban migration in the context of China. Cash gifts at social events such as weddings, funerals, and milestone birthdays constitute a large share of household expenditure, and it is an important signal for participation in the local social network (Yang 2016; Bulte et al. 2018; Tian and Xia 2024). Using the initial migration network and changes in migration policy in the destination regions, we construct an origin region's exposure to out-migration pull forces. We find that a region that experienced larger exposures to migration policy changes had an increase in out-migration and a reduction in gift expenditures, especially for rural households. In terms of risk-sharing, the reduction in gift expenditure led to an increase in household-level correlation between income and expenditure, while the increase in out-migration led to a decrease. Thus, the reduction in between-household risk sharing through social networks is partially compensated by the increase in within-household risk sharing through out-migration.

We use the household-level information in the Chinese Family Panel Studies (CFPS) to construct changes in family migration decisions, income, and expenditure patterns. CFPS is a nationally representative longitudinal survey of Chinese households conducted biennially from 2010, and we use about 8,000 households that remained similar in structure in 2010 and 2016. In particular, we

observe the number of household members who migrated temporarily to work in other regions to construct the out-migration flows. The average share of migrants increased from 8.5% in 2010 to 16% in 2016. We also observe the amount of expenditure on gifts in social events and total household expenditure to construct the share of expenditure on gifts. In 2010, the average expenditure share on gifts was 8%, and it declined to 7.6% in 2016. This dataset is unique because it is both *longitudinal* and has *social network-related* information.[1]

We use a shift-share design to construct the changes in the exposure to the pull forces of out-migration. The out-migration shock comes from the regulation changes in destination regions. China's Hukou system creates internal migration barriers since people who choose to live and work in regions outside of their Hukou registration location are subject to reduced job opportunities and access to local public goods. However, the once rigid system experienced a series of changes at the local level in recent decades, leading to reductions in migration barriers. Part of the relaxation of migration restrictions was due to changes in the availability and geographic distributions of economic opportunities, such as increases in labor demand in the urban manufacturing sector resulting from international trade liberalization (Tian, forthcoming). The increased rural-to-urban migration brought about substantial changes in both the origin and the destination areas (for example, agricultural modernization in Tian et al. 2023 and an increase in labor intensity of urban manufacturing firms in Imbert et al. 2022). Exploiting the initial migration connections linking different prefectures similar to Imbert et al. (2022) and Tian et al. (2023) and destination-specific changes in migration policy, we construct an origin prefecture's exposure to the relaxation of internal migration restrictions.

We provide evidence consistent with the exogeneity of the exposure to policy changes from 2010 and 2016. The finest geographic information we have on the origin side is at the county level, and we show that the exposure to changes in migration regulation is uncorrelated with demographics such

[1]For example, surveys such as the Panel Studies of Income Dynamics (PSID) in the US, the Household, Income and Labour Dynamics (HILD) in Australia, the German Socio-Economic Panel (GSOEP), and the British Household Panel Survey (BHPS) are longitudinal but have little information on social network related issues, and surveys such as the General Social Survey (GSS) and the World Value Survey (WVS) have rich information on values and norms but are not longitudinal.

as the change of population, gender ratios, number of generations living in the same household, birth and death rates, education, and emigration from 2000 to 2010. It is also uncorrelated with changes in economic conditions such as the shares of employment in agriculture, manufacturing, and services in the 2000-2010 period. At the household level, we show that the exposure to migration policy change is uncorrelated with household characteristics such as the initial share of migrants, family income, and urban status. On the destination side, we show that migration regulation changes at the prefecture level from 2010 to 2016 were uncorrelated with the initial in-migration rate in 2010. Similar as in Imbert et al. (2022) and Tian et al. (2023), we additionally discuss inference and identification issues related to the shift-share design following recent literature (Adao et al. 2019; Goldsmith-Pinkham et al. 2020; Borusyak et al. 2022).

We find that exposure to changes in migration policy led to more out-migration. A one-standard-deviation larger exposure to policy change at the destination region resulted in a 0.13-standard-deviation larger increase in the number of migrants at the household level. Using a reduced-form specification, we find that a one-standard-deviation larger exposure to policy change also led to a 0.08-standard-deviation larger reduction in the share of expenditure on gifts. When we use the exposure to changes in migration policy as an instrument for changes in out-migration, we find that a 10% increase in the number of migrants led to a 0.6 percentage point reduction in the share of expenditure on gifts, which is 7.5% of the 2010 baseline level. The results are robust to using the regulation change constructed by Natural Language Processing instead of coded by hand, and using alternative clusters and sample weights, and we present equivalence results when both the outcome variable and the regressors are converted to the shift level.

We further confirm that the decreases in the share of expenditure on gifts are driven by actual reductions in the expenditure on gifts, not the increases in overall household expenditure. We find that the exposure to migration policy change had a positive but statistically insignificant impact on family income and the value of assets. When we investigate the impact on expenditure patterns, we find that the reduction in the share of expenditure on transfers (which includes the expenditure on gifts) was smaller than the reduction in the share of expenditure on gifts, suggesting that there

were increases in other types of transfers when households spent less on gifts. The expenditure share of consumption, welfare, and housing-related issues remained largely unchanged.

We find that the effects of exposure to the policy change on gift expenditure are larger for rural households, households that initially had a smaller number of migrants, and households with a larger family size. This suggests that households that initially relied more on the re-distributive network were able to reduce their reliance on the network and invest less in it, once they had the opportunity to migrate.[2]

We also investigate the impact of regulation changes, out-migration, and gift expenditure on risk sharing. Using the 2010 and 2016 cross-sections, we find that regions with larger shares of expenditure on gifts on average had a small correlation between income and expenditure at the household level, suggesting a beneficial effect of investments in social networks on between-household risk sharing. At the same time, region-level out-migration rates did not affect risk sharing. This is consistent with the theory and evidence in Morten (2019), since both risk-sharing and out-migration are endogenous choices. If migration is risky, regions with more risk-sharing can facilitate more out-migration. At the same time, out-migration can reduce the demand for risk-sharing, if the income risks in the destination regions and origin regions are uncorrelated. Indeed, when we use the changes in out-migration rates from 2010 and 2016, we find that increases in out-migration rates at the regional level led to a reduction in the correlation of income and expenditure at the household level. On the other hand, reductions in the share of expenditure on gifts led to less risk-sharing between households, suggesting that reductions in network participation erode the insurance effects of social networks. This creates a distributional effect between households with and without migrants. Households with migrants enjoy the benefit of out-migration and pay some cost for the reduction in support from the social network. However, households without migrants only suffer from a decline in local social connectedness. These results speak to the ones in Meghir et al. (2022), where the authors show that a permanent decline in migration costs would result in a reduction in risk sharing.

[2]These results are consistent with the theory and evidence in Munshi and Rosenzweig (2016).

Our paper contributes to several strands of literature. First is the relationship between migration and risk sharing in developing countries. Temporary versus permanent out-migration may have a differential impact on risk sharing since both migration and risk sharing are endogenous decisions (Banerjee and Newman 1998; Munshi and Rosenzweig 2016; Morten 2019; Meghir et al. 2022). In our context, internal migration in China has been increasing steadily in the past few decades as part of the structural transformation process, and out-migration from the rural areas is closer to permanent migration. We add to the literature in two ways. First, the literature usually only observes the effect of the network, measured as risk-sharing (i.e., the correlation between income and expenditure). In our case, we provide direct evidence on the *changes in the action of investing* in social networks — gift exchanges. We can do so because of the unique setting — large changes in migration and large, plausibly exogenous policy changes, and unique data that allows tracking households over time and has information on gift expenditure and other network-related issues. Second, instead of relying on programs and policies that reduce the cost of migration, our policy changes increased the benefit of migration, and we show directly that the policy affects risk sharing through out-migration.

The second strand of literature is the interaction between culture and formal institutions. Researchers have documented the coevolution of institutions and culture (for example as Greif 1994, Aghion et al. 2011, Alesina et al. 2015, Lowes et al. 2017, and summarized in Alesina and Giuliano 2015). Munshi and Rosenzweig (2006) and Bau et al. (2023) show that cultural practices can affect the size of benefit to certain policy changes. Similar to Bau (2021), we provide direct evidence on a plausibly exogenous shock to the institutional environment and show fast changes in cultural norms.

The third strand of literature is networks and social ties in developing economies. Social networks are important in providing information (Beaman et al. 2021; Barwick et al. 2023), credit and insurance (Greif 1993; Greif et al. 1994; Townsend 1994; Udry 1994; Karlan et al. 2009; Kinnan and Townsend 2012), and favors (Fisman et al. 2018; Fisman et al. 2020; Chu et al. 2021). We are closest to Banerjee et al. (2023), where the authors show that the introduction of formal credit

markets can affect the structure of social networks. We are one of the few papers that use exogenous shocks that causally affect social networks and investigate their implications.

The fourth strand of literature is societal changes in response to economic opportunities, including the impact of economic shocks on institutions. Tian (forthcoming) shows that international trade liberalization triggers institutional reforms in the form of labor regulation, and Tian et al. (2023) further shows that trade liberalization led to structural transformation and agricultural modernization. McCaig and Pavcnik (2015) document how trade liberalization drives reductions in labor informality. Barsbai et al. (2017) and Miho et al. (2023) show the impact of migration on the diffusion of norms and values. We provide a unique piece of evidence on the impact of such changes on traditional cultural practices. In particular, our findings are a direct test of the predictions in Kranton (1996) — the entry of markets can destroy reciprocal tribal systems.

The rest of the paper is organized as follows. Section 2 provides background information on the importance of social networks in China. Section 3 presents the household-level data with information on gift expenditures, data on migration policy changes, and the measurement of exposure to policy change. Section 4 presents the main empirical specification and discusses identification issues. Section 5 presents findings on migration and gift expenditure. Section 6 discusses evidence on risk sharing. The last section concludes.

2 Background

Developing countries usually feature relational societies where personal connections and social ties substitute the functions of formal institutions and markets, which may be absent (Banerjee et al. 1994). To maintain such networks, people need to actively engage in costly social activities to signal their participation and present reciprocity (Kranton 1996; Jackson et al. 2012).

Social ties are important in China for contract enforcement, credit access, job applications, migration help, and obtaining other types of favors (Fisman et al. 2018; Fisman et al. 2020; Chu et al. 2021; Barwick et al. 2023). Tian and Xia (2024) document that in rural areas, about 20%

of adults report that they have zero basic knowledge of the law and almost 50% report that they don't know how to seek legal assistance. Accordingly, 20% think that it is fine to do business with acquaintances without signing contracts. More than 60% of people approach relatives and friends as their first option to borrow money. People also obtain job referrals and migration help through social networks. In a 2008 survey, 58% of respondents agreed that when recruiting, they will favor their relatives and friends over other better-qualified candidates.

In China, one important tactic or etiquette for maintaining these social ties is to attend "big events" and contribute cash gifts (Yan 1993; Yang 2016). These events traditionally mainly include weddings and funerals, but more events are added to the list over time: baby showers, milestone birthdays, college admission, and housewarmings. Households usually hold big celebration banquets, and the guest list could include friends, relatives, and acquaintances.[3] When attending the event, guests need to contribute cash gifts (or non-pecuniary gifts of similar values), and although it is nominally voluntary, the size of the gift usually follows a tiered system, which depends on the closeness of the relationship and is agreed upon locally (and informally) in the community.

Intuitively, communities and households that benefit more from the network engage more in the gift economy. As documented in Tian and Xia (2024), a higher share of expenditure is usually observed in areas that are (a) more rural; (b) with more homogeneous populations, e.g., communities with fewer migrants, and ethnic clusters; (c) less connected with the outside world, e.g., communities where people's siblings live close by, where people think speaking local dialect is important in communication, and where phone and TV networks arrived later; and (d) with stronger traditional values, e.g., place where households have family genealogy books and annual ancestor veneration event.

These gift expenditures can quickly pile up and become burdensome (Bulte et al. 2018). Among households surveyed by CFPS in 2010, the median number of gift occasions for a household is ten, and on average, 69% of households attend at least one wedding in a year. The cost of gifts constitutes

[3]Tian and Xia (2024) documents that in 2014, the average cost of hosting such an event was 38% of total household annual income. The expenditure size varies by event type. For example, weddings and funerals (repast) are the most expensive, 86% and 37% of income, respectively.

8% of total household expenditure on average, and households report substantial financial pressure regarding gift exchanges (Tian and Xia 2024).

Over time, the improved access to larger markets started to erode the once-tight communities. According to population censuses, in 2000, 36% of the Chinese population lived in urban areas, and the number increased to 64% in 2020.[4] Among households surveyed in the CFPS 2010 and 2016, the average expenditure share on gifts declined from 8% in 2010 to 7.6% in 2016. One potential driver of fast urbanization and the associated declines in the countryside is the relaxation of Hukou policies in urban areas. We will discuss the facts on Hukou policy changes in the next section.

3 Data and Measurement

3.1 Household Survey

We use the Chinese Family Panel Survey (CFPS) to construct measures of household-level outcomes, including the share of expenditure on gifts. The CFPS is a nationally representative bi-annual longitudinal survey conducted by Peking University in China, with rich information on the socio-economic outcomes of communities, households, and individuals, and it is often seen as the Chinese equivalent of the Panel Study of Income Dynamics (Chen et al., 2023; Barwick et al., forthcoming). The survey includes 25 provinces in China that cover more than 95% of the Chinese population. It uses multi-stage stratified sampling, and the lowest sampling frame is villages in the rural areas and districts in the urban areas. Counties are the finest level where geographic information is available. We use the 2010 and 2016 waves because we focus on medium-run changes in migration and expenditure patterns.

We use the number of migrants and the share of migrants from the total household size as two main measures of out-migration at the household level. A migrant is someone who lives and works outside of their Hukou registration place or their usual residence location. In rural areas, it usually

[4]Key statistics from the population censuses is here: `www.gov.cn/gongbao/content/2001/content_60740.htm` for 2000, and `www.stats.gov.cn/sj/zxfb/202302/t20230203_1901087.html` for 2010.

means in other counties, while in urban areas, it usually means in other prefectures. A migrant has to be financially integrated with the main surveyed household; otherwise, they will not be included as a household member.

Income and expenditure information are also collected at the household level. The person most familiar with household finances is chosen to answer the related questions. There are three income categories: wages and operational income, income from assets, and transfers. There are four expenditure categories: consumption, transfers, insurance, and housing-related. In principle, the income and expenditure of migrants should be included. However, the person who answers the survey may not have perfect information on the income and expenditure patterns of the migrants. We also observe assets.

We use the share of expenditure on gifts to measure the household's investment in the local social network. The survey asks: "Last year, how much did your household spend on gifts on social occasions (such as weddings, funerals, birthdays, college admission)? Including the value of non-pecuniary gifts (e.g., cigarette, alcohol, tea, pastry, fruit, and jewelry) and monetary gifts (e.g., cash, securities), evaluated at the market value at the time of gift exchange." In the expenditure categories, it is classified as one of the transfers.

Households surveyed in 2010 may remain the same household in the same location, split into multiple households, or move to other locations. In the case when the households move, the CFPS survey team made efforts to track them. In our main specification, since we want to investigate the impact on expenditure patterns, including gift expenditure, we focus on the households that did not split for comparability. Empirically, we show that the probability of split is uncorrelated with the size of the exposure to the policy change.

3.2 Migration Policy Changes

We use the migration policy changes at the prefecture level in Tian (forthcoming) to construct shocks to the attractiveness of the destination regions. China's Hukou system assigns each citizen a registration status associated with a location and a sector based on parents' status. Internal

migrants within China suffer diminished access to job opportunities and public services such as medical insurance and public school. Before 2000, the system remained rigid and homogeneous across regions. Starting in 2000, increased economic opportunities resulted from international trade liberalization and other market-oriented reforms incentivized changes in the Hukou system.

Tian (forthcoming) collected a prefecture-level dataset including all government regulations that address migrant-related issues. These regulations cover various topics and affect migrant well-being in the destination areas regarding income, access to social insurance, and access to local public goods. A regulation can be pro-migrant or anti-migrant. Each regulation is assigned a migrant-friendliness score from a five-point index with scores ranging from –2 to 2, where –2 is strongly against migrants, and 2 is strongly pro-migrant. After coding each regulation, the sum of the scores of all regulations enacted up to a certain year in prefecture d is used to measure its overall migrant-friendliness ($score_d$). This is because all prefectures started from the same level of migrant-friendliness around 1995, and each additional regulation makes a prefecture more or less migrant-friendly. We use the inverse hyperbolic sine transformed regulation score, $\sinh^{-1}(score_d)$, instead of log since there might be negative scores. We use this transformation instead of the levels because the distribution of the level is highly skewed to the right, with a few prefectures with very high scores. Tian (forthcoming) show that these regulatory changes led to substantial increases in the size of internal migration in China after 2000.

We use changes in migrant friendliness from 2010 to 2016 to capture the changes in the attractiveness of a prefecture as a migration destination. From 1995 to 2009, 1,390 new migrant-related regulations were enacted in 234 prefectures, and 1,324 additional regulations were enacted by 272 prefectures from 2010 to 2015.

3.3 Exposure to Migration Policy Change

We use the individual sample of the 2010 population census to construct the prefecture-to-prefecture migration networks. The sample includes 4.6 million individuals in total, where 9.3% individuals are used to construct the prefecture-to-prefecture migration network since their Hukou registration

prefecture differs from their current residence prefecture.

Then the exposure to regulation changes at the origin prefecture level is measured as

$$\Delta\text{policy exposure}_o \equiv \sum_{d \neq o} \frac{m_{od}}{\sum_{d' \neq o} m_{od'}} \Delta \sinh^{-1}(\text{score}_d), \tag{1}$$

where m_{od} is the number of residents in prefecture d whose Hukou registration is in prefecture o.

We use the prefecture-level migrant connection instead of county or finer level because once we go to finer levels, the migration network matrix becomes more sparse and potentially noisy. The underlying assumption here is that the migration patterns are similar across geographic units within a prefecture. If this assumption is violated, the exposure measure will have measurement errors and bias our results toward zero.

3.4 Other Regional Measures

We also use the region-level aggregate statistics from the 2000 and the 2010 population censuses to construct measures of baseline regional characteristics. For the destination regions, since the policy change will be at the prefecture level, we use prefecture-level aggregates to check whether the post-2010 regulation changes were correlated with the initial characteristics of the prefectures in 2010. For the origin locations, the finest level where we observe is at the county level, so we construct various demographic measures at the county level to construct changes in origin characteristics from 2000 to 2010.

4 Econometric Framework and Identification

We intend to investigate the impact of exposure to migration regulation changes on out-migration choices and household expenditure patterns. Our main regression equation is as follows:

$$\Delta Y_{i,2010-2016} = \alpha_0 + \alpha_1 \Delta\text{policy exposure}_{o(i),2010-2016} + X_{i,2010}\Gamma + I_{p(i)} + \epsilon_i, \tag{2}$$

where $\Delta Y_{i,2010-2016}$ is the change in the outcome of interest from 2010 to 2016 for household i, Δpolicy exposure$_{o(i),2010-2016}$ is the exposure to changes in migration policy through the migrant network for household i in prefecture o, and $X_{i,2010}$ is a vector of household characteristics in 2010. We control for province fixed effects ($I_{p(i)}$) to take into account province-time specific policy changes. Standard errors are clustered at the village/district level. We weight the households using the panel sample weights provided by the survey.

The first set of outcomes is migration-related. We use two measures: the number of migrants in the household and the share of migrants. Since we expect the migration policy change at the destination regions to directly affect migration choices, these regressions will be the first stage. We also use this equation to investigate the reduced form effect of migration policy change on the share of expenditure on gifts. We additionally show the 2SLS regression results where policy exposure is the instrument for migration.

The main threat to identification we face is omitted variable bias. If regions facing a larger exposure to migration policy change have underlying trends of out-migration and gift exchanges, such as demographic changes that drive both, then we will not be able to disentangle them.

To address this concern, we check empirically whether the demographic changes in 2000-2010 at the county level are correlated with exposure to migration policy changes. For the ones that are correlated, we control for them in the main regression for robustness. In Appendix Table B1, we show that the changes in policy exposure from 2010 and 2016 at the origin counties are uncorrelated with demographics such as the change of population, gender ratios, number of generations living in the same household, birth and death rates, education, and emigration from 2000 to 2010. It is also uncorrelated with changes in economic conditions such as the shares of employment in agriculture, manufacturing, and services in the 2000-2010 period. The only exception is the 2000-2010 changes in the illiteracy rate, and in Appendix Tables, we show that controlling for this variable does not affect the coefficient estimates of our main regressions. In Appendix Table B2, we show that at the household level, the exposure to migration policy change is uncorrelated with household characteristics such as the initial share of migrants, family income, and urban status.

Second, we want to understand whether the destination regions that relaxed migration policy in 2010-2016 have differential characteristics. The biggest concern is the share of migrants. In Appendix Table B3, we show that the changes in regulation from 2000-2010 did cause larger flows of migration into those regions, measured as the share of migrants in 2010, consistent with the evidence in Tian (forthcoming). However, migration regulation changes at the prefecture level from 2010 to 2016 were uncorrelated with the initial in-migration rate in 2010.

We additionally address specific shift-share design concerns. We follow recent literature on shift-share designs to conduct exercises to better understand the source of variation, conduct tests in support of the identification assumptions, and do inference (see Adao et al. 2019; Goldsmith-Pinkham et al. 2020; Borusyak et al. 2022). Our setting is similar to the ones of Imbert et al. (2022) and Tian et al. (2023). Specifically, the pre-existing migrant connections in 2010 are likely to reflect bilateral migration costs and origin and destination characteristics before our study period, they are likely to be endogenous to the socio-economic characteristics of the origin households. Thus, the validity of our shift-share design will require that the shifts, i.e., the migration policy changes enacted in the destination regions, be exogenous to household characteristics, including gift-exchange behaviors. Borusyak et al. (2022) shows that a consistent estimator using a shift-share design would require (i) shifts being as-good-as-randomly assigned as if arising from a natural experiment, and (ii) that there are many sufficiently independent shifts, each with sufficiently small average exposure to the shocks.

In our context, condition (i) is likely to hold since the migration policy changes in destination regions are unlikely to be correlated with unobservables that affect household gift expenditure and migration patterns. Regarding (ii), we want to understand the dispersion of the migration network since it determines the exposure to the shocks for the origin regions. In the 2010 population census, there are 335 prefectures with at least one migrant, resulting in 335 shares in our analysis. Denote the share of migrants from origin prefecture o to destination prefecture d in the baseline year 2010 as $\mu_{od} \equiv \frac{m_{od}}{\sum_{d'=o} m_{od'}}$, and the number of origin prefectures as N ($N = 340$). We find that the Herfindahl index of destination contributions, $\sum_j (\frac{\sum_i \mu_{ij}}{N})^2$, is 0.017. This is a relatively

small number, indicating that the shares are dispersed and that the effect is not driven by a few destinations.

Additionally, we would like to check that there is variation in the migrant network from an origin prefecture's point of view; otherwise, if the migration patterns are the same across origin prefectures, the exposure to shocks from the destination prefectures will also be the same across origins. To do this, we calculate the Herfindahl index of the shares for each origin prefecture ($\sum_d \mu_{od}^2$). Then we calculate the mean and the standard deviation of these Herfindahl indices across origins. While the mean is 0.135, the standard deviation is 0.10, indicating that different origin prefectures do have differences in where they send migrants.

Finally, following Borusyak et al. (2022), we conduct the equivalence exercise where exposure-weighted regressions are done with both the outcome variables and the explanatory variables inverted to the shift level, which is the destination-prefecture level in our case. In this specification, we are also able to cluster the standard errors at the destination-province level for robustness, to allow for spatial correlation in errors at the shock level. The results are shown in Appendix Table B8.

The policy change can affect gift expenditure through migration due to different channels. For example, out-migration rates can affect income, assets, and the total family size, and these household characteristics can affect gift behaviors. Alternatively, it could be because of risk sharing within the household since the income risks of migrants are unlikely to be correlated with income risks in the main household. Thus, we investigate directly the effect of policy change on these outcomes and provide evidence on changes in risk-sharing patterns to shed light on the channels.

5 Effects of exposure to migration policy changes on out-migration and the share of expenditure on gifts

5.1 Migration

We first investigate the impact of exposure to migration policy changes on the out-migration rates. Figure 1 presents the bin scatter plot for these first stage results. In Panel (a), out-migration is measured as the number of migrants in a household, and the horizontal axis is the exposure to changes in migration regulation. We see that a more migrant-friendly policy environment in the destination regions led to more out-migration from the origin areas. Panel (b) uses the share of migrants in a household as the measure of out-migration, and the pattern is similar.

Regression results in Table 1 confirm the patterns in Figure 1. Panel A Column (1) regresses the change in the share of migrants on the change in policy exposure, controlling for province fixed effects and month of survey fixed effects for 2010 and 2016. We see a statistically significant coefficient estimate of 0.198, indicating that a one-standard-deviation larger exposure to policy changes results in a 0.10-standard-deviation larger increase in the share of migrants at the household level. The effects become smaller but remain statistically significant when we add the initial share of migrants, family size, and urban status in Columns (2)-(4). Panel B uses the number of migrants as the outcome variable and the findings are similar: a one-standard-deviation larger exposure to policy changes results in a 0.13-standard-deviation larger increase in the number of migrants at the household level.

5.2 Share of expenditure on gifts

We then investigate the reduced-form effect of exposure to migration policy changes on the expenditure pattern of the households. Table 2 has the same specifications as in Table 1, but uses the share of expenditure on gifts as the outcome variable. In Column (1), we find a statistically significant effect of -0.60, indicating that a one-standard-deviation larger exposure to policy change also led

to a 0.08-standard-deviation larger reduction in the share of expenditure on gifts. The coefficient estimates remain stable when we add additional controls in Columns (2)-(4). The results are robust when we (a) cluster the standard errors at the prefecture level instead of the village/district level; (b) use the 2010 household weights instead of the panel weights; and (c) use the migration regulation scores coded by a natural language processing method instead of by hand (Appendix A.2). We also provide equivalence results where both the outcome variables and the regressors are converted to the destination prefecture level in Appendix Table B8. Here, it allows us to cluster standard errors by destination province, and the results are very similar.

Appendix Table B7 uses the exposure to changes in migration policy as an instrument for changes in out-migration. We find that a 10% increase in the number of migrants led to a 0.6 percentage point reduction in the share of expenditure on gifts, which is 7.5% of the 2010 baseline level.

5.3 Channels

We further confirm that the decreases in the share of expenditure on gifts are driven by actual reductions in the expenditure on gifts, not the increases in overall household expenditure. Table 3 Column (1) shows that a one-standard-deviation larger increase in the exposure to migration policy change led to a 0.09-standard-deviation large decline in the expenditure on gifts. The coefficient estimate of policy change on total expenditure in Column (2) is statistically insignificant and economically small: a one-standard-deviation larger increase in the exposure to migration policy change led to a 0.02-standard-deviation large decline in the total household expenditure.

We find that the exposure to migration policy change had a positive but statistically insignificant impact on family income, total family size, and the value of assets (Columns 3-5). When we investigate the impact on expenditure patterns in Table 4, we find that the reduction in the share of expenditure on transfers (which includes the expenditure on gifts) was smaller than the reduction in the share of expenditure on gifts, suggesting that there were increases in other types of transfers when households spent less on gifts.[5] The expenditure share of consumption, welfare, and housing-

[5]In 2010, gift expenditure is on average 76% of total transfers.

related issues remained largely unchanged.

5.4 Heterogeneous effects

The impact of policy exposure on gifts may vary by household characteristics, and we explore heterogeneous effects in Table 5. We find that the effects of exposure to the policy change on gift expenditure are larger for rural households, households that initially had a smaller number of migrants, and households with a larger family size. This suggests that households that initially relied more on the re-distributive network were able to reduce their reliance on the network and invest less in it, once they had the opportunity to migrate. These results are consistent with the theory and evidence in Munshi and Rosenzweig (2016), on how heterogeneous costs and benefits of the network participation across households predict differential reacts to shocks.

In sum, we provide evidence that the exposure to migration policy changes led to increased out-migration and a decrease in the share of expenditure on gifts. These effects are driven by an actual reduction in expenditure on gifts rather than an increase in overall household expenditure. We also find that the households that initially relied more on social networks reduced gift expenditure more.

6 The Impact of Out-Migration and Gift Expenditure on Risk Sharing

As noted in Morten (2019), one way to measure the extent of risk sharing is to use the correlation between income and expenditure (Townsend 1994; Udry 1994; Morten 2019). Given the fact that exposure to migration policy changes led to large changes in out-migration rates and people's investment and participation in the risk-sharing network, we would expect risk sharing outcomes to change as well.

We first show that gift exchanges are helpful in risk sharing using cross-sectional data in Table 6. In Column (1), we pool the 2010 and 2016 cross-sections and regress the log household expenditure

on the log income, controlling for year-fixed effects. We additionally add the regional average share of expenditure on gifts and interact it with the log income. Here, a region is a village/district in the sample. We find that regions with high average gift share had a smaller correlation between income and expenditure, suggesting more risk sharing. Results are similar in Column (2) where we control for months of survey fixed effects in 2010 and 2016. Thus, there is a beneficial effect of investments in social networks on between-household risk sharing.

In Columns (3) and (4), the results are insigificant when we use the average share of migrants at the region level for interaction. This suggest that while out-migration may improve risk sharing, it could be the case the risky areas have higher out-migration rates, exactly as highlighted in Morten (2019).

Table 7 Panel A investigates the impact of *changes* in policy, out-migration rates, and gift shares on risk sharing. Column (3) uses the changes in out-migration rates from 2010 and 2016 for interaction, and we find that increases in out-migration rates at the regional level led to a reduction in the correlation of income and expenditure at the household level. Thus, more (potentially policy-induced) out-migration does lead to more risk-sharing within households. On the other hand, reductions in the share of expenditure on gifts led to less risk-sharing between households (Column 4), suggesting that reductions in network participation erode the insurance effects of social networks. These results speak to the ones in Meghir et al. (2022), where the authors show that a permanent decline in migration costs would result in a reduction in risk sharing.

Overall, in Column (2), we use the changes in policy exposure for interaction. The effect on risk sharing is positive but insignificant. This could be because the policy led to more out-migration, having a $(+)$ effect on risk sharing, and less expenditure on gifts, having a $(-)$ effect on risk sharing. The two effects cancels out partially.

Panel B restricts the sample to households with at least one migrant in 2016, and the effects are even larger than in Panel A. As a placebo, when we analyze households with no migrants in 2016 (Column 3), the within-household risk-sharing effect of out-migration does not show up, and neither does the overall beneficial effect of policy exposure (Column 2). However, the reduction in

the regional average expenditure share on gifts still leads to a reduction in between-household risk-sharing. While households with migrants were able to get more risk-sharing from out-migration, households without migrants actually suffered since the level of local social connectedness declined.

7 Conclusion

Migration is risky but also rewarding. By exposing to the uncorrelated risks in other areas, the risk sharing between households are replaced by risk sharing within households. Out-migration can affect spillover effects to the origin locations through effects on risk sharing, since the demand for support from the local social network may decline when network members have access to other risk-sharing technologies, such as out-migration. We study changes in households' participation in local social networks in response to relaxed migration restrictions in the context of China. Using a panel of households from 2010 to 2016, we find that increased access to out-migration led to a decline in expenditures in cash gifts at social events, especially for households in rural areas. The decline in cash gifts reduces risk sharing across households, but out-migration of household members mitigates this effect.

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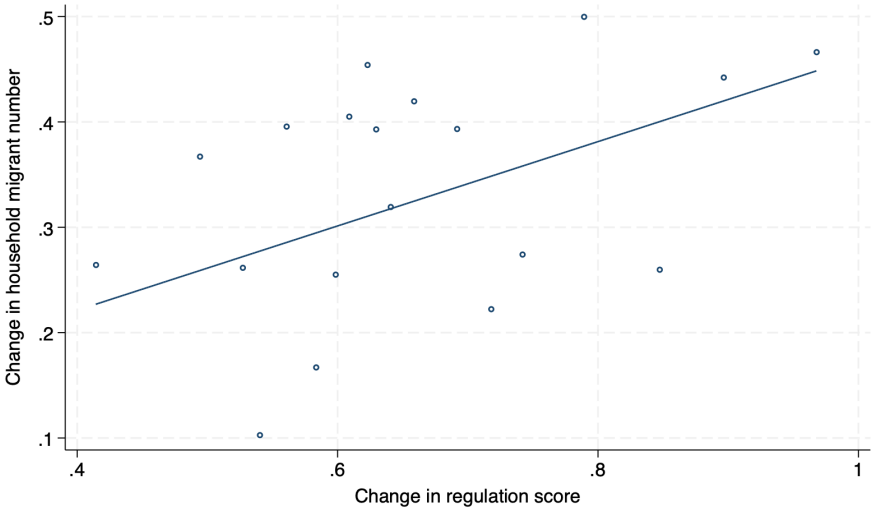
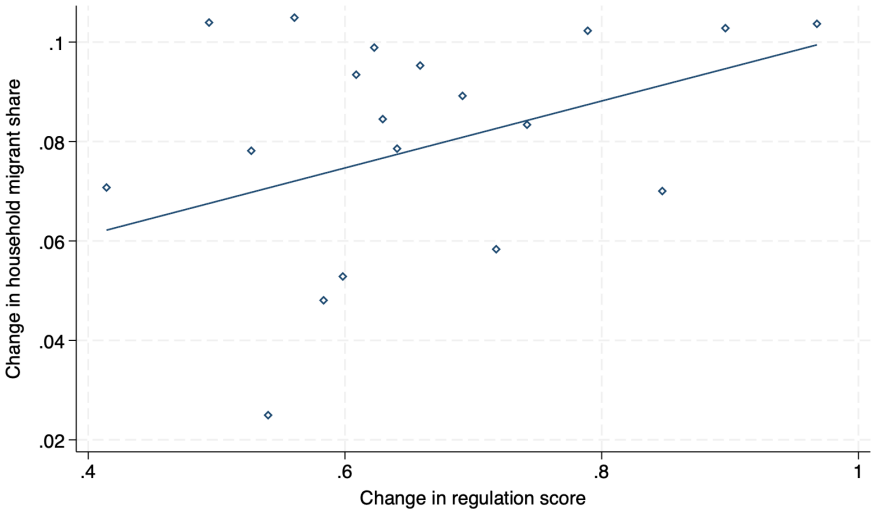
Figures and Tables

Figure 1: First stage: the impact of regulation changes on the number of migrants and the share of migrants, bin scatter plots

(a) Number of migrants



(b) Share of migrants



Note: This figure shows the bin scatter plots of the changes in $\sinh^{-1}$ regulation score on the number of migrants and the share of migrants for households that were observed both in 2010 and in 2016 and remained one household.

Table 1: First stage: the impact of migration regulation change on out-migration, 2010-2016

Panel A	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of migrants, 2010-2016			
Δpolicy exposure, 2010-2016	0.198***	0.143**	0.137**	0.129**
	(0.068)	(0.067)	(0.067)	(0.063)
Share of migrants, 2010		-0.743***	-0.751***	-0.779***
		(0.024)	(0.025)	(0.024)
Family size, 2010			0.008***	0.006***
			(0.002)	(0.002)
Urban status, 2010				-0.069***
				(0.010)
Constant	-0.054	0.047	0.021	0.068
	(0.046)	(0.045)	(0.046)	(0.044)
Observations	8,354	8,354	8,354	8,354
R-squared	0.037	0.238	0.240	0.253
Panel B	(1)	(2)	(3)	(4)
Outcome variable:	Δ number of migrants, 2010-2016			
Δpolicy exposure, 2010-2016	0.971***	0.796**	0.691**	0.660**
	(0.319)	(0.316)	(0.298)	(0.285)
Number of migrants, 2010		-0.680***	-0.767***	-0.791***
		(0.026)	(0.026)	(0.027)
Family size, 2010			0.127***	0.123***
			(0.012)	(0.012)
Urban status, 2010				-0.252***
				(0.042)
Constant	-0.340	0.022	-0.354*	-0.190
	(0.214)	(0.211)	(0.209)	(0.203)
Observations	8,354	8,354	8,354	8,354
R-squared	0.043	0.238	0.266	0.277

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

Table 2: The impact of migration regulation change on expenditure share of gifts, 2010-2016

	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δpolicy exposure, 2010-2016	-0.060***	-0.058***	-0.058***	-0.059***
	(0.022)	(0.020)	(0.020)	(0.020)
Share of expenditure on gifts, 2010		-0.796***	-0.796***	-0.799***
		(0.019)	(0.019)	(0.019)
Family size, 2010			0.000	-0.000
			(0.001)	(0.001)
Urban status, 2010				-0.010***
				(0.004)
Constant	0.034**	0.099***	0.099***	0.106***
	(0.015)	(0.014)	(0.014)	(0.014)
Observations	8,354	8,354	8,354	8,354
R-squared	0.022	0.419	0.419	0.421

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

Table 3: The impact of migration regulation change on expenditure, family size, income, and asset, 2010-2016

Outcome variable Y:	(1) Δ gift exp.	(2) Δ total exp.	(3) Δ family size	(4) Δ family inc.	(5) Δ total assets
Δpolicy exposure, 2010-2016	-4.70***	-16.29	0.08	18.38	234.29
	(1.37)	(22.04)	(0.31)	(19.71)	(192.83)
Y, 2010	-0.36***	-0.23**	-0.22***	-0.43***	-0.31
	(0.08)	(0.09)	(0.02)	(0.08)	(0.19)
Constant	4.96***	36.87**	0.90***	7.92	-56.09
	(0.98)	(18.01)	(0.23)	(13.84)	(183.02)
Observations	8,354	8,354	8,354	8,257	8,001
R-squared	0.06	0.04	0.07	0.07	0.07

Note: Standard errors are clustered at the village(district) level. All columns control for family size in 2010, urban status in 2010, province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect. The values in Columns (1) (2) (4) and (5) are in 1000 RMB.

Table 4: The impact of migration regulation change on expenditure shares in different categories, 2010-2016

Outcome variable Y:	(1)	(2)	(3)	(4)
	Δ share of expenditure in			
	consumption	transfer	welfare	housing-related
Δpolicy exposure, 2010-2016	-0.009	-0.039	0.003	0.040
	(0.046)	(0.036)	(0.010)	(0.031)
Constant	-0.030	0.013	0.003	0.017
	(0.032)	(0.025)	(0.007)	(0.021)
Observations	8,354	8,354	8,298	8,298
R-squared	0.016	0.014	0.021	0.020

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

Table 5: The impact of migration regulation change on expenditure share of gifts, heterogeneous effects, 2010-2016

	(1)	(2)	(3)
Outcome variable:			
Δ share of expenditure on gifts, 2010-2016			
Δpolicy exposure, 2010-2016	-0.076***	-0.068***	-0.006
	(0.023)	(0.021)	(0.028)
Urban status, 2010	-0.042**		
	(0.017)		
Urban status × Δpolicy exposure	0.048**		
	(0.017)		
Share of migrants, 2010		-0.053	
		(0.035)	
Share of migrants × Δpolicy exposure		0.114**	
		(0.051)	
Family size, 2010			0.009**
			(0.004)
Family size × Δpolicy exposure			-0.013***
			(0.005)
Share of expenditure on gifts, 2010	-0.800***	-0.799***	-0.801***
	(0.019)	(0.019)	(0.019)
Constant	0.117***	0.110***	0.069***
	(0.016)	(0.015)	(0.020)
Observations	8,354	8,354	8,354
R-squared	0.422	0.423	0.422

Note: Standard errors are clustered at the village(district) level. All columns control for family size in 2010, urban status in 2010, province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

Table 6: The impact of the share of expenditure on gifts on risk sharing, 2010 and 2016

	(1)	(2)	(3)	(4)
Outcome variable:	Log expenditure			
Log income	0.582***	0.577***	0.508***	0.507***
	(0.020)	(0.020)	(0.022)	(0.022)
Share of expenditure on gifts, region average	7.522***	7.406***		
	(2.194)	(2.146)		
Log income × Share of expenditure on gifts, region average	-0.767***	-0.748***		
	(0.210)	(0.206)		
Migrant share, region average			-1.017	-0.932
			(1.171)	(1.179)
Log income × Migrant share, region average			0.016	0.011
			(0.108)	(0.108)
Constant	4.190***	4.423***	4.990***	5.231***
	(0.211)	(0.210)	(0.227)	(0.235)
Year FE	Y		Y	
Month of Survey FE by year		Y		Y
Observations	16,572	16,708	16,572	16,708
R-squared	0.515	0.519	0.521	0.524

Note: Standard errors are clustered at the village(district) level.

Table 7: Risk sharing effects, 2010-2016

Panel A: pooled sample	(1)	(2)	(3)	(4)
Outcome variable:	Log expenditure, 2016			
Log income, 2016	0.525***	0.550***	0.542***	0.525***
	(0.016)	(0.065)	(0.022)	(0.017)
Δpolicy exposure, 2010-2016		0.114		
		(0.940)		
Δpolicy exposure × Log income, 2016		-0.040		
		(0.091)		
Δ share of migrant, region average, 2010-2016			2.380	
			(1.661)	
Δ share of migrant, region average × Log income, 2016			-0.256*	
			(0.155)	
Δ share of expenditure on gifts, region average, 2010-2016				4.370
				(3.645)
Δ share of expenditure on gifts, region average × Log income, 2016				-0.470
				(0.343)
Family size, 2016	0.060***	0.060***	0.062***	0.059***
	(0.007)	(0.007)	(0.007)	(0.007)
Constant	4.915***	4.835***	4.755***	4.918***
	(0.159)	(0.672)	(0.228)	(0.165)
Observations	8,354	8,354	8,354	8,354
R-squared	0.481	0.481	0.483	0.480
Panel B: households with migrants in 2016	(1)	(2)	(3)	(4)
Outcome variable:	Log expenditure, 2016			
Log income, 2016	0.431***	0.557***	0.474***	0.425***
	(0.023)	(0.107)	(0.033)	(0.023)
Δpolicy exposure, 2010-2016		1.500		
		(1.572)		
Δpolicy exposure × Log income, 2016		-0.181		
		(0.146)		
Δ share of migrant, region average, 2010-2016			3.864*	
			(2.124)	
Δ share of migrant, region average × Log income, 2016			-0.343*	
			(0.194)	
Δ share of expenditure on gifts, region average, 2010-2016				8.796
				(7.007)
Δ share of expenditure on gifts, region average × Log income, 2016				-0.902
				(0.652)
Family size, 2016	0.072***	0.073***	0.072***	0.074***
	(0.009)	(0.009)	(0.009)	(0.009)
Constant	5.729***	4.675***	5.243***	5.773***
	(0.238)	(1.133)	(0.349)	(0.233)
Observations	3,369	3,369	3,369	3,369
R-squared	0.306	0.308	0.307	0.302

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

Online Appendices

(Not for publication)

A Additional results

A.1 Pre-trend checks

A.1.1 Changes in demographics in origin counties before 2010

Table B1: The relationship between pre-2010 demographic and economic changes and the exposure to post-2010 regulation changes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Outcome variable:	Δpolicy exposure, 2010-2016						
Δ log population	0.006						
	(0.018)						
Δ male to female ratio		0.001					
		(0.001)					
Δ number of households			0.002				
			(0.019)				
Δ number of two generation households				0.004			
				(0.018)			
Δ number of three generation households					0.002		
					(0.017)		
Δ share of locals						0.008	
						(0.045)	
Δ log employment							-0.007
							(0.017)
Constant	0.654***	0.655***	0.654***	0.654***	0.654***	0.654***	0.654***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations	157	157	157	157	157	157	157
R-squared	0.765	0.765	0.765	0.765	0.765	0.765	0.765
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Outcome variable:	Δpolicy exposure, 2010-2016						
Δ birth rate	0.002						
	(0.003)						
Δ death rate		0.003					
		(0.005)					
Δ illiteracy rate			-0.003*				
			(0.001)				
Δ average years of education				0.023			
				(0.019)			
Δ share of employment in agriculture					0.001		
					(0.001)		
Δ share of employment in manufacturing						-0.001	
						(0.001)	
Δ share of employment in services							-0.000
							(0.001)
Constant	0.657***	0.654***	0.641***	0.624***	0.660***	0.655***	0.656***
	(0.007)	(0.006)	(0.009)	(0.027)	(0.010)	(0.006)	(0.010)
Observations	157	157	157	157	157	157	157
R-squared	0.765	0.765	0.772	0.767	0.766	0.766	0.765

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.1.2 Exposure to regulation changes and initial household characteristics

Table B2: The correlation between the regulation change (2010-2016) and initial household characteristics (2010)

	(1)	(2)	(3)	(4)		
Outcome variable:	Δpolicy exposure, 2010-2016					
Share of migrants, 2010	-0.015					
	(0.010)					
Number of migrants, 2010		-0.003				
		(0.002)				
Family size, 2010			0.002			
			(0.001)			
Log family income, 2010				-0.002		
				(0.002)		
Urban status, 2010					-0.003	
					(0.009)	
Share of expenditure on gifts, 2010						0.001
						(0.017)
Constant	0.678***	0.678***	0.671***	0.696***	0.678***	0.676***
	(0.004)	(0.004)	(0.006)	(0.015)	(0.006)	(0.004)
Observations	8,354	8,354	8,354	8,354	8,354	8,354
R-squared	0.710	0.710	0.710	0.710	0.710	0.710

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.1.3 Changes in regulation in destination prefectures before 2010

Table B3: The relationship between pre-2010 regulation changes, the migrant share of the population in the destination regions, and the post-2010 regulation changes

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome variable:	$\Delta\sinh^{-1}$ regulation score 2010-2016		Migrant share of population 2010		$\Delta\sinh^{-1}$ regulation score 2010-2016	
$\Delta\sinh^{-1}$ regulation score, 2000-2010	-0.179***	-0.218***	0.026***	0.031***		
	(0.043)	(0.044)	(0.008)	(0.008)		
Migrant share of population, 2010					-0.391	-0.257
					(0.394)	(0.280)
Constant	0.977***	1.025***	0.044***	0.036***	0.776***	0.769***
	(0.103)	(0.055)	(0.008)	(0.011)	(0.053)	(0.021)
Province fixed effects		Y		Y		Y
Observations	335	331	335	331	335	331
R-squared	0.088	0.221	0.076	0.361	0.004	0.122

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.2 Robustness of gift expenditure results

A.2.1 Alternative clustering

Table B4: The impact of migration regulation change on expenditure share of gifts, cluster at the prefecture level, 2010-2016

	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δpolicy exposure, 2010-2016	-0.060**	-0.058**	-0.058**	-0.059**
	(0.024)	(0.026)	(0.026)	(0.025)
Share of expenditure on gifts, 2010		-0.796***	-0.796***	-0.799***
		(0.017)	(0.017)	(0.017)
Family size, 2010			0.000	-0.000
			(0.001)	(0.001)
Urban status, 2010				-0.010***
				(0.004)
Constant	0.034**	0.099***	0.099***	0.106***
	(0.017)	(0.018)	(0.018)	(0.017)
Observations	8,354	8,354	8,354	8,354
R-squared	0.022	0.419	0.419	0.421

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.2.2 Alternative sample weight

Table B5: The impact of migration regulation change on expenditure share of gifts, initial household sample weight, 2010-2016

	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δpolicy exposure, 2010-2016	-0.050**	-0.042**	-0.043**	-0.043**
	(0.021)	(0.019)	(0.019)	(0.019)
Share of expenditure on gifts, 2010		-0.801***	-0.801***	-0.804***
		(0.019)	(0.019)	(0.019)
Family size, 2010			0.000	-0.000
			(0.001)	(0.001)
Urban status, 2010				-0.010***
				(0.004)
Constant	0.026*	0.090***	0.088***	0.094***
	(0.014)	(0.013)	(0.014)	(0.014)
Observations	8,354	8,354	8,354	8,354
R-squared	0.019	0.425	0.425	0.427

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.2.3 NLP measures of regulation changes

Table B6: The impact of migration regulation change on expenditure share of gifts, NLP regulation coding, 2010-2016

	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δpolicy exposure, NLP, 2010-2016	-0.055**	-0.060***	-0.060***	-0.058***
	(0.022)	(0.021)	(0.021)	(0.021)
Share of expenditure on gifts, 2010		-0.796***	-0.796***	-0.800***
		(0.019)	(0.019)	(0.019)
Family size, 2010			0.000	-0.000
			(0.001)	(0.001)
Urban status, 2010				-0.010***
				(0.004)
Constant	0.028**	0.097***	0.097***	0.102***
	(0.014)	(0.014)	(0.014)	(0.014)
Observations	8,354	8,354	8,354	8,354
R-squared	0.022	0.419	0.419	0.421

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.3 2SLS results

Table B7: 2SLS: the impact of out-migration on the share of expenditure on gifts, instrumented by the change in migration regulation, 2010-2016

Panel A	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δ share of migrants, 2010-2016	-0.301*	-0.294**	-0.293**	-0.301**
	(0.162)	(0.142)	(0.142)	(0.141)
Share of expenditure on gifts, 2010		-0.768***	-0.768***	-0.773***
		(0.029)	(0.029)	(0.029)
Family size, 2010			-0.000	-0.001
			(0.001)	(0.001)
Urban status, 2010				-0.018***
				(0.006)
First stage F stat				
Observations	8,354	8,354	8,354	8,354
R-squared	-0.550	-0.147	-0.145	-0.169
Panel B	(1)	(2)	(3)	(4)
Outcome variable:	Δ share of expenditure on gifts, 2010-2016			
Δ number of migrants, 2010-2016	-0.061*	-0.060**	-0.061**	-0.062**
	(0.031)	(0.027)	(0.027)	(0.027)
Share of expenditure on gifts, 2010		-0.776***	-0.775***	-0.780***
		(0.024)	(0.025)	(0.025)
Family size, 2010			0.001	0.001
			(0.001)	(0.001)
Urban status, 2010				-0.015***
				(0.005)
First stage F stat				
Observations	8,354	8,354	8,354	8,354
R-squared	-0.345	0.057	0.049	0.036

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.4 Shift-share equivalence results at the shift level

Table B8: The impact of migration regulation change on the share of migrants and expenditure share of gifts, 2010-2016

	(1)	(2)	(3)	(4)
Outcome variable, 2010-2016:	Δ share of migrants		Δ share of exp. on gifts	
Δpolicy exposure, 2010-2016	0.198**	0.198**	-0.060**	-0.060**
	(0.081)	(0.079)	(0.029)	(0.025)
Constant	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Standard error clustering	Robust	Province	Robust	Province
Observations	335	335	335	335
R-squared			0.118	0.118

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.5 Effect on different types of expenditure within the consumption category

Table B9: The impact of migration regulation change on expenditure shares in different consumption categories, 2010-2016

Panel A	(1)	(2)	(3)	(4)
Outcome variable Y: Δ share of expenditure in	food	clothing	rents	daily exp.
Δpolicy exposure, 2010-2016	-0.045	-0.034**	0.059*	0.068**
	(0.065)	(0.014)	(0.035)	(0.033)
Constant	-0.007	0.023**	0.029	-0.055**
	(0.044)	(0.009)	(0.024)	(0.022)
Observations	8,310	8,261	8,354	8,353
R-squared	0.057	0.014	0.038	0.017
Panel B	(1)	(2)	(3)	(4)
Outcome variable Y: Δ share of expenditure in	medical	transportation	education	other
Δpolicy exposure, 2010-2016	-0.082**	0.019	0.011	-0.004
	(0.039)	(0.028)	(0.041)	(0.028)
Constant	0.039	-0.035*	-0.020	-0.005
	(0.027)	(0.019)	(0.028)	(0.018)
Observations	8,353	8,232	8,354	8,353
R-squared	0.013	0.022	0.020	0.024

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.6 Risk sharing results for households without migrants in 2016

Table B10: Risk sharing effects, 2010-2016, for households with no migrants in 2016

	(1)	(2)	(3)	(4)
Outcome variable:		Log expenditure, 2016		
Log income, 2016	0.553***	0.527***	0.556***	0.553***
(0.018)	(0.072)	(0.021)	(0.019)	
Δpolicy exposure, 2010-2016		-0.550		
		(1.058)		
Δpolicy exposure × Log income, 2016		0.039		
		(0.100)		
Δ share of migrant, region average, 2010-2016			0.661	
			(1.619)	
Δ share of migrant, region average × Log income, 2016			-0.078	
			(0.154)	
Δ share of expenditure on gifts, region average, 2010-2016				3.425
				(3.755)
Δ share of expenditure on gifts, region average × Log income, 2016				-0.344
				(0.356)
Family size, 2016	0.075***	0.075***	0.075***	0.074***
	(0.010)	(0.010)	(0.010)	(0.009)
Constant	4.659***	5.030***	4.632***	4.661***
	(0.174)	(0.760)	(0.206)	(0.190)
Observations	4,983	4,983	4,983	4,983
R-squared	0.572	0.572	0.572	0.569

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect, month of survey in 2010 fixed effect, and month of survey in 2016 fixed effect.

A.7 The impact of regulation change on the number of household splits

Table B11: The impact of migration regulation change (2010-2016) on the number of households (2016)

	(1)	(2)	(3)	(4)
Outcome variable in 2016:	Number of households		Split(=1)	
Δpolicy exposure, 2010-2016	-0.023	0.000	-0.018	0.001
	(0.074)	(0.070)	(0.059)	(0.055)
Share of migrants, 2010		0.350***		0.278***
		(0.038)		(0.030)
Constant	1.200***	1.151***	0.174***	0.135***
	(0.051)	(0.048)	(0.040)	(0.038)
Observations	10,014	10,014	10,014	10,014
R-squared	0.018	0.036	0.016	0.033

Note: Standard errors are clustered at the village(district) level. All columns control for province fixed effect and month of the survey in 2010 fixed effect.