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Research Article

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Integrated Care Policy and Downward Intergenerational Support

Abstract: Understanding how formal social protection alters intra-household resource allocation is vital for assessing public policy spillovers. Exploiting China's Integrated Medical and Elderly Care Pilot Program as a quasi-experiment and using 2011–2018 CHARLS panel data, this study employs a difference-in-differences design to examine the policy's impact on downward intergenerational financial transfers. We find that the program significantly increases both the probability (extensive margin) and amount (intensive margin) of financial support provided by older parents to adult children. These positive effects are stronger among low-income, younger-old, and less-educated households. Mechanism analyses indicate that care integration mitigates future health risk uncertainty and reduces precautionary savings, thereby relaxing intertemporal budget constraints. The released household resources primarily fuel non-periodic financial transfers rather than rigid commitments. Overall, this paper demonstrates that formal care integration crowds in family-based intergenerational support, providing important insights for optimizing public eldercare provision in rapidly aging societies.

Keywords: integrated medical and elderly care policy; downward intergenerational financial support; household spillover effects; difference-in-differences model

1. Introduction

Population aging is reshaping patterns of old-age support and intergenerational relations in Chinese families. According to the National Bureau of Statistics, by the end of 2025 people aged 60 and above accounted for 23.0% of China's population, while those aged 65 and above accounted for 15.9%. Population aging will remain a fundamental feature of China for a long time. At the same time, smaller households and greater population mobility are weakening traditional family-based informal care, making health-risk exposure and resource constraints within households increasingly visible. Against this background, a key question is whether innovations in public services can reduce health and care risks in later life and, in turn, reshape intergenerational interaction and resource allocation within families.

Integrated medical and elderly care (IMEC) represents a major institutional innovation designed to bridge the long-standing divide between healthcare and social care services. The launch of the national IMEC pilot program in 2016 systematically consolidated medical and care resources, thereby reducing information frictions and search costs for families seeking formal care. By creating exogenous spatial variation in service accessibility, this policy rollout offers a compelling quasi-natural experiment to evaluate how improved

public care provision influences household behavior.

A large literature examines the relationship between social protection and intergenerational support, but most studies focus on upward financial support from adult children to parents or on the health and welfare of older adults themselves (Zhang and Chen, 2014). Much less is known about how formal old-age support may affect financial transfers from older parents to adult children. Under China's traditional downward-oriented intergenerational contract, older households often face uncertainty about future health and long-term care costs. Self-insurance motives therefore encourage substantial precautionary saving, which constrains current disposable resources (De Nardi et al., 2010). Integrated medical and elderly care can reduce uncertainty surrounding severe health and care risks by providing more continuous and accessible services. This risk-reduction effect may lower the need for precautionary savings, relax intertemporal budget constraints, and convert marginal resources into downward support for adult children. Older adults are thus not only recipients of medical and care services; they may also support adult children through financial transfers and grandchild care. Evaluating the policy should therefore consider not only individual welfare gains among older adults but also spillover effects on resource allocation within the family.

This study treats the national pilot program launched in 2016 as a quasi-natural experiment. Using CHARLS panel data for 2011-2018 together with city-level data on medical and elderly care resources, we apply a DID model to examine the mechanisms and structural features of the pilot's effect on downward intergenerational support. The study makes three main contributions. First, it broadens the analysis of the economic effects of integrated medical and elderly care. Rather than viewing older adults only as passive recipients of public services and family support, it examines transfers from parents to children and identifies spillover effects on intrahousehold resource allocation. Second, it analyzes both the extensive and intensive margins of downward financial support and decomposes transfers by form (cash versus in-kind) and frequency (regular versus non-regular), while also comparing upward and downward transfers. Third, it documents distributional differences across households: the effect is stronger among low-income, relatively younger, and less-educated households. These findings provide evidence for more targeted elderly care provision and greater equity in access to public services.

2. Literature Review

Intergenerational financial support is an important mechanism through which households smooth consumption and manage uncertainty over the life cycle. Two main theories explain intergenerational transfers: altruism (Becker, 1974) and exchange motives (Cox, 1987). Under altruism, parents include children's utility in their own utility function and transfer resources to improve children's welfare. Under exchange theory, transfers are part of an implicit intertemporal family contract, with parents providing financial support in exchange for care and emotional support from children. Intergenerational transfers therefore depend not only on household resources and members' needs, but also on expectations about future

health and old-age risks. Once public protection and formal services enter the domain of family eldercare, this household decision process is reshaped by changes in the external institutional environment. Research on the relationship between social and family-based old-age support is, in essence, part of this broader question (Zhang and Chen, 2014).

This theoretical divide extends to a long-standing debate over whether public welfare crowds out or crowds in private intergenerational transfers. The crowding-out view argues that expanded public welfare substitutes for family support and weakens adult children's responsibility for older parents (Cox et al., 2004). The crowding-in view holds that formal risk sharing can reduce household health risks and care burdens, relax budget constraints, and thereby encourage mutual support within families (Wang and Chen, 2017; Geng and Sun, 2023). Studies of intergenerational feedback further suggest that improvements in older adults' health and finances may reduce their dependence on children and, under a downward-oriented intergenerational contract, increase financial support to adult children (Chen and Silverstein, 2000; Yu et al., 2020). Such transfers may support current consumption while also embodying implicit exchange and saving motives, including expectations of care and emotional support from children (Schwarz et al., 2010; Song and Gao, 2023). Downward transfers can therefore serve both consumption-spillover and risk-buffering functions.

Integrated medical and elderly care combines health services with elderly care and differs from conventional cash-transfer programs in its mechanism. Rising disability and long-term care risks increase medical and caregiving burdens on households. Families respond through informal arrangements centered on care by adult children and through formal institutions such as integrated medical and elderly care and long-term care insurance (Shang et al., 2024). Because care resources are scarce, coordination across sources of care is important (Widmer et al., 2013; Mommaerts, 2018). Existing evidence shows that preventive health interventions and better links between medical and elderly care can reduce disability risk and ease the burden on families with limited informal care resources (Zong et al., 2020; Zhu and He, 2021). At the same time, formal protection may release previously suppressed demand for medical and care services. Whether public programs crowd out or crowd in private intergenerational transfers therefore depends on program design, household resource constraints, and service needs. Studies of formal care arrangements provide a foundation for understanding substitution and complementarity between formal and family care (Cai et al., 2021; Li et al., 2025).

When social protection and public services enter the family eldercare domain, existing patterns of household resource allocation may adjust. Health insurance, long-term care insurance, and related programs need not have effects in the same direction. Cash benefits such as pensions can raise older adults' own financial capacity and reduce their reliance on support from children, generating substitution between social and family-based old-age support (Zhang and Chen, 2014). Integrated medical and elderly care, by contrast,

does not directly increase household income; it affects household decisions by changing the conditions under which services are supplied. Its effects may therefore be more complex. Better risk protection can ease resource constraints, while greater service accessibility may also induce additional medical and elderly care use (Deng et al., 2024; Xie and Yang, 2025). Existing studies find that integrated care can improve health and medical utilization by increasing accessibility, improving chronic disease management, and strengthening continuity of care (Zhang et al., 2022; Zhang et al., 2023; Ni et al., 2025; Qifeng et al., 2025). Unlike cash-transfer policies, integrated care primarily reduces systemic health risk by improving supply conditions and lowering search costs. It may release precautionary savings, but it may also increase current medical and care spending by activating previously unmet demand. These two channels create opposing pressures on intergenerational resource allocation.

Recent studies have begun to evaluate how integrated medical and elderly care reshapes intergenerational relations at the household level. Ouyang and Shen (2025), for example, examine effects on daily care, financial support, and emotional support; Zhang and Deng (2025) study upward intergenerational financial support; and Zhu and Shen (2026) examine the probability, amount, and composition of transfers from adult children to parents. These studies are highly relevant, but they generally treat older adults as passive recipients of public services and family support and focus on whether the policy changes children's financial or caregiving inputs to parents. This leaves relatively unexplored the capacity and willingness of older parents in traditional Chinese families to redistribute resources downward to the next generation.

This study shifts attention to downward financial support from parents to children in order to identify household spillover effects of formal protection more fully. Under China's traditional downward-oriented intergenerational contract, older parents may continue to support adult children through cash, in-kind assistance, and resources devoted to grandchildren once public institutions reduce future health and care risks. We therefore use the national pilot program as a quasi-natural experiment to estimate its net effects on the incidence of downward financial support (the extensive margin) and the amount of support (the intensive margin). We further decompose transfers by resource form and commitment cost, distinguishing cash from in-kind transfers and regular from non-regular transfers, and compare the policy's effects on upward and downward transfers. This provides a more complete picture of the complementarity between formal social protection and traditional intergenerational support.

3. Theoretical Analysis and Hypotheses

In theory, integrated medical and elderly care may affect downward transfers from parents through two opposing channels: the release of precautionary savings and the crowding out of transfers by current expenditures.

As China undergoes social transition and rapid population aging, older households' asset allocation and intergenerational transfer decisions are constrained by uncertainty about future health and care needs. Under

the life-cycle hypothesis, rational individuals smooth consumption over time, but uncertainty in later life creates a need for precautionary savings. When systematic medical and elderly care protection is limited, households may hold substantial savings for self-insurance, resulting in tight intertemporal budget constraints (De Nardi et al., 2010). Medical and elderly care needs compete with consumption, risk reserves, and intergenerational transfers for limited household resources. Because illness, disability, and long-term care costs are uncertain, older households and households preparing for old age must allocate resources between current consumption and potential future care expenditures. Funds set aside for severe health shocks therefore reduce older parents' capacity to support their children.

Under the precautionary-saving channel, integrated medical and elderly care combines medical treatment, rehabilitation, nursing, and long-term care resources. This lowers search frictions and transaction costs in accessing formal services and improves households' expectations regarding future health risks (Yu and Feng, 2018). In essence, the policy is a public-service supply shock that changes intertemporal budget constraints by reducing uncertainty over expected expenditures. When the formal care system absorbs part of the uncertainty surrounding catastrophic care costs, older adults have less need to maintain large precautionary reserves. More resources become available for other uses. The resulting liquidity constitutes additional marginal wealth that, under altruistic motives, may be directed toward children or grandchildren.

The current-expenditure channel works in the opposite direction. Greater access to medical and care services lowers barriers to utilization and can turn previously unmet health needs—caused by information asymmetry, geographic barriers, or limited supply—into actual service use. Under Grossman's (1972) health-capital framework, higher service utilization may increase current out-of-pocket medical and nursing expenditures. With a relatively fixed short-run household budget, more spending on older adults' own health and care needs may crowd out transfers to children. Exchange-motive theory also predicts possible crowding out: if parents provide money partly to 'purchase' care time from children (Bernheim et al., 1985), affordable formal services may substitute for children's care and reduce parental transfers.

The net effect of the pilot depends on the relative strength of these two channels. We expect the positive precautionary-saving release effect to dominate the negative current-expenditure effect in China's institutional and family context. First, the scale of tail risk is much larger than the marginal increase in current spending. Older households may hold substantial assets against prolonged illness, disability, and other low-probability, high-cost risks, while additional out-of-pocket spending generated by service use is likely to be comparatively limited. Second, basic medical insurance and broadly accessible public care services buffer current household costs and place an upper bound on the crowding-out effect (Peng and Hu, 2015). Third, strong intergenerational altruism under China's downward-oriented family contract provides a clear destination for released resources (Becker, 1974). Once improved risk expectations reduce the need for precautionary reserves, liquidity is likely to flow to children facing marriage, childbearing, housing

purchases, or early-career expenses, thereby increasing downward financial support.

In sum, integrated medical and elderly care does more than substitute for family care. By reducing future health risks and relaxing intertemporal budget constraints, it can reallocate resources within the family toward the next generation. We therefore propose:

Hypothesis 1. The integrated medical and elderly care pilot significantly increases both the probability and the amount of downward intergenerational financial support provided by older households.

The policy effect should be particularly related to older households' pre-existing medical burden and exposure to severe health risks. High and uncertain medical and care costs are a major source of precautionary saving in later life. By integrating medical and elderly care resources, the pilot improves service accessibility and protection efficiency and lowers the out-of-pocket risk associated with unexpected health shocks. Cooperation between medical institutions and elderly care providers, together with the extension of medical services into communities and homes, can also improve continuity of care. For households with a heavier pre-policy medical burden, the reduction in uncertainty should be larger, allowing a greater release of precautionary funds, looser intertemporal budget constraints, and a stronger tendency to reallocate resources. Once savings are released, however, households may adjust the structure of downward support according to resource characteristics and commitment costs. This leads to the following hypothesis:

Hypothesis 2. The pilot increases household transfers mainly by reducing pre-existing medical risk and releasing precautionary savings; the effect is stronger for households with a heavier pre-policy medical burden.

Policy effects may also vary across households. First, income determines the extent to which families can privately insure against health risks. High-income households have greater asset reserves and better access to market-based services, so marginal improvements in public medical and elderly care may do relatively little to relax their overall intertemporal budget constraints. Low-income households have fewer private risk-sharing tools and depend more on public services. Medical and care spending also takes a larger share of their budget, making future health risk more likely to translate into current saving pressure. By providing broadly accessible formal care, the pilot can substantially reduce precautionary reserve needs among low-income households and make it easier to convert marginal resources into support for children (Chen and Yang, 2023).

Second, household age structure captures both the rigidity of health needs and the flexibility of resource allocation. As average household age rises, disability and chronic disease risks become more concentrated and medical and care spending increasingly becomes a necessary expenditure, leaving less room for reallocation. Relatively younger older households are earlier in the later-life stage; their health needs are less rigid, so released precautionary savings can more readily be converted into flexible transfers to children.

Third, education affects information-search costs and the ability to use public resources. Medical and

elderly care services are specialized and characterized by information asymmetry. Better-educated households are generally more capable of identifying information and coordinating resources, while less-educated households face greater difficulties in identifying services and navigating referrals. The pilot seeks to improve coordination and information sharing between medical and elderly care providers, thereby reducing institutional transaction costs especially for less-educated households. We therefore propose:

Hypothesis 3. The positive effect of the pilot on downward intergenerational financial support is stronger among low-income households, households with a lower average age, and households with lower average educational attainment.

4. Research Design

4.1 Model Specification

To identify the impact of the integrated medical and elderly care (IMEC) pilot policy on downward intergenerational support, we construct a standard difference-in-differences (DID) model. The baseline specification is formulated as follows：

$$\mathrm{Y}_{\mathrm{ict}} = \beta_0 + \beta_1 Treat_c \times Post_t + \beta_2 X_{ict} + \mu_i + \tau_t + \varepsilon_{ict}$$

where i, c, and t index households, cities, and years, respectively. The dependent variable, $\mathrm{Y}_{\mathrm{ict}}$, measures the level of downward intergenerational financial support provided by older adult i residing in city c in year t. $Treat_c$ is a treatment indicator that equals 1 if city c is designated as an IMEC pilot site, and 0 otherwise. $Post_t$ is a post-policy dummy variable equal to 1 for 2016 and subsequent years, and 0 otherwise. X_{ict} denotes a vector of individual and household-level control variables. μ_i and τ_t capture household fixed effects and year fixed effects, respectively, and ε_{ict} is the idiosyncratic error term. The coefficient of primary interest is β_1, which captures the net impact of the IMEC pilot policy on downward intergenerational financial support. Standard errors are clustered at the city level.

4.2 Sample Selection and Data Sources

The main data come from the China Health and Retirement Longitudinal Study (CHARLS) and city-level macroeconomic statistics. CHARLS follows residents aged 45 and above and their household members, collecting detailed demographic, social, economic, and health information. It also records intergenerational exchanges within families, including financial support, service support, emotional support, and grandchild care, making it well suited to this study. We use the 2011, 2013, 2015, and 2018 waves. We also include selected city characteristics and indicators of medical service use as controls, drawing the corresponding data from the China City Statistical Yearbook

We process the data as follows. First, because only selected districts in the four centrally administered municipalities—Beijing, Tianjin, Shanghai, and Chongqing—were designated as pilot units, we follow Ouyang and Shen (2025) and exclude all observations from these municipalities[1].Second, we remove

[1] Based on CHARLS city matching and sample availability, we identify and retain 25 integrated medical and elderly care pilot cities: Kunming, Hohhot, Weihai, Qingdao, Guangzhou, Jiangmen, Shenzhen, Nanning, Suzhou, Nanchang, Ganzhou,

observations with missing or abnormal key information and focus on people aged 60 and above and their households; we also require at least one child in the family so that intergenerational transfers can be observed. Third, monetary variables are winsorized at the tails and transformed to reduce right skewness. Finally, we match the microdata to city-level information and the list of 90 pilot sites. The resulting sample contains 24,140 observations, with 25 pilot cities and 96 control cities.

4.3 Variables and Descriptive Statistics

4.3.1 Dependent Variables

The main outcomes measure downward intergenerational financial support from parents to children. Following Miao and Fan (2023) and Wang and Liu (2024), we use two measures: whether the respondent and spouse provided financial support to children, and the total amount they provided during the year. These measures are constructed from the CHARLS questions asking whether the respondent and spouse gave financial support during the past year to children who did not live with them and, if so, how much they gave. The first outcome is a binary indicator. The second is a continuous amount. Because the amount variable contains many zeros and is right-skewed, we apply the inverse hyperbolic sine (IHS) transformation.

4.3.2 Key Explanatory Variable

The key explanatory variable is the integrated medical and elderly care policy. Based on the two lists of national pilot cities released by the National Health Commission and the Ministry of Civil Affairs in June and September 2016, the DID treatment indicator equals 1 for pilot cities in the post-policy period and 0 otherwise.

4.3.3 Control Variables

Following previous studies (Cai et al., 2021; Zhu et al., 2026), the controls include characteristics of the reference respondent and the household. Individual-level controls are age, sex, marital status, household registration (hukou), education, chronic disease status, and public pension receipt; the main household-level control is household size. Some reference-respondent characteristics may change across waves when the household reference member changes. Age is calculated as survey year minus birth year and enters as a continuous variable. Marital status equals 1 if the reference respondent is married, cohabiting, or temporarily living apart from the spouse, and 0 otherwise. The household public-pension indicator equals 1 if at least one observed household member receives a public pension. A separate individual public-pension indicator equals 1 if the reference respondent receives a public pension. Sex equals 1 for women and 0 for men. Hukou equals 1 for rural registration and 0 for urban registration. Education is recoded into six ordered categories: 0 = illiterate, 1 = primary school or below, 2 = junior high school, 3 = senior high school or secondary vocational education, 4 = junior college or university, and 5 = postgraduate education. It is included as a continuous ordered variable. Chronic disease equals 1 if the reference respondent reports at least one of 14

Baoding, Shijiazhuang, Luoyang, Puyang, Zhengzhou, Jiaxing, Hangzhou, Yueyang, Changsha, Lanzhou, Zhangzhou, Dalian, Harbin, and Qiqihar.

physician-diagnosed chronic conditions and 0 otherwise[2].

Table 1 reports descriptive statistics for the full sample and separately for the treatment and control groups. The final sample contains 24,140 observations from 6,035 households across the 2011, 2013, 2015, and 2018 waves. The average age is 62.19 years; 79.55% of respondents are married or cohabiting, 55.37% are women, 82.85% have rural hukou, and 77.18% have at least one physician-diagnosed chronic disease. Downward transfers occur in 34.1% of observations, and the mean IHS-transformed transfer amount is 2.7166. Descriptively, both the incidence and amount of downward transfers are higher in the treatment group than in the control group, although causal effects require further estimation.

Table 1. Descriptive Statistics

Variable	Full sample			Treatment	Control
	N	Mean	SD	Mean	Mean
Any downward support	24140	0.3401	0.4738	0.3441	0.3393
Downward support amount	24140	2.7166	3.9367	2.7912	2.7011
Age	24140	62.1868	9.9612	62.0963	62.2057
Married/cohabiting	24140	0.7955	0.4033	0.8129	0.7919
Female	24140	0.5537	0.4971	0.5596	0.5525
Rural hukou	24140	0.8285	0.3770	0.7414	0.8467
Public pension	24140	0.3690	0.4825	0.3614	0.3706
Education	24140	1.1077	0.9740	1.3487	1.0575
Chronic disease	24140	0.7718	0.4197	0.7603	0.7742
Household size	24140	3.2500	1.7242	3.2109	3.2582

5. Empirical Results

5.1 Baseline Results

Table 2 presents the baseline estimates. Columns (1) and (2) use an indicator for whether parents provide financial support to children, capturing the extensive margin—whether the policy changes the probability of a transfer. Columns (3) and (4) use the total amount of support transferred from parents to children, capturing the intensive margin—whether the policy changes the size of transfers. All specifications include household and year fixed effects, with standard errors clustered at the city level. Columns (1) and (3) exclude additional controls, while Columns (2) and (4) control for sex, age, hukou, education, marital status, chronic disease, public pension receipt, household size, and related individual and household characteristics.

For the extensive margin, the estimated pilot coefficient is 0.0735 after the full set of controls is included and is significant at the 1% level. The pilot therefore increases the probability of downward financial transfers by about 7.35 percentage points. For the intensive margin, the coefficient is 0.5076 and significant at the 5% level, indicating a significant increase in the transformed transfer amount. Adding controls does

[2] The 14 chronic conditions are hypertension, diabetes, cancer, chronic lung disease, heart disease, stroke, psychiatric or emotional problems, arthritis or rheumatism, dyslipidemia, liver disease, kidney disease, digestive disease, asthma, and memory-related disease.

not change the statistical significance of the policy effect. Overall, the policy increases both the likelihood and the amount of financial support that children receive from parents.

Taken together, the extensive- and intensive-margin results show that the pilot expands downward intergenerational support both by increasing the incidence of transfers and by increasing their scale. One plausible mechanism is that integrated medical and care services improve older adults' expectations about future health, reduce the need for precautionary savings, and allow previously reserved resources to be reallocated as transfers within the family.

Table 2. Baseline Regressions

Variable	Any financial support to children		Amount of financial support to children	
	(1)	(2)	(3)	(4)
Integrated care policy	0.0766***	0.0735***	0.5401***	0.5076**
	(0.0244)	(0.0246)	(0.2037)	(0.2071)
Female		-0.0300		-0.2879
		(0.0312)		(0.2506)
Age		-0.0041		-0.0369
		(0.0048)		(0.0384)
Rural hukou		0.0468		0.3397
		(0.0355)		(0.2933)
Education		0.0000		-0.0274
		(0.0238)		(0.1936)
Married/cohabiting		0.0763***		0.7006***
		(0.0194)		(0.1601)
Chronic disease		-0.0017		-0.0331
		(0.0155)		(0.1280)
Public pension		-0.0405***		-0.4289***
		(0.0121)		(0.0935)
Household size		-0.0104***		-0.0973***
		(0.0032)		(0.0263)
Constant	0.1766***	0.3774	1.3350***	3.2789
	(0.0103)	(0.2904)	(0.0815)	(2.3273)
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	24,140	24,140	24,140	24,140
R^2	0.3734	0.3754	0.4036	0.4064

Note: Standard errors clustered at the city level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

5.2 Robustness Checks

5.2.1 Pre-Trend Test

A DID design requires treatment and control groups to follow similar trends before the policy shock. In this setting, changes in both the probability and amount of transfers received by children from parents should have evolved similarly in pilot and non-pilot areas before the policy. We test this identifying assumption using 2015, the last pre-policy survey wave, as the reference period and interacting pilot-city status with

indicators for the 2011, 2013, and 2018 survey waves in an event-study specification.

Figure 1 reports the results. Before the pilot, the estimated coefficients for 2011 and 2013 fluctuate around zero for both the transfer-incidence and transfer-amount outcomes, and all 95% confidence intervals include zero. A joint Wald test of the 2011 and 2013 pre-policy interactions yields p-values of 0.9572 for transfer incidence and 0.9047 for transfer amount, so the null that the two pre-policy coefficients are jointly zero cannot be rejected. This indicates no significant difference in pre-policy trends between pilot and non-pilot areas.

After the policy, the coefficient for the core policy variable is positive: both the probability and the amount of downward support rise, consistent with the baseline estimates. As an additional check, we use only the three pre-policy waves—2011, 2013, and 2015—to estimate a linear pre-trend. The coefficients on the interaction between pilot-city status and the pre-policy time trend are -0.0052 and -0.0623 for the two outcomes, with p-values of 0.806 and 0.722, respectively. Neither is statistically significant, supporting the parallel-trends assumption.

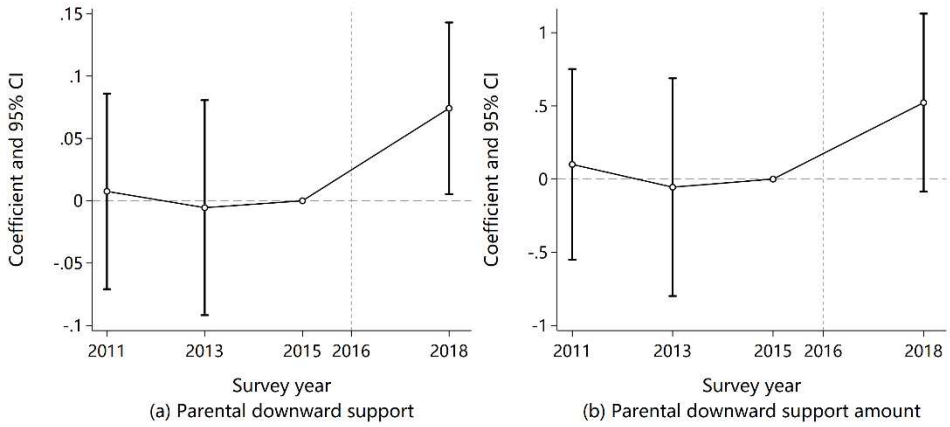

Figure 1. Parallel-Trends Test

5.2.2 Robustness of Statistical Inference

The pilot is implemented at the city level, so households within the same city may share policy conditions and unobserved shocks. With a relatively limited number of treated cities and unequal city sample sizes, the asymptotic approximation underlying conventional cluster-robust standard errors may perform poorly in finite samples. Wild cluster bootstrap procedures can improve finite-sample inference in such settings. Following Roodman et al. (2019) and Liu et al. (2024), we therefore re-test the policy coefficient using 9,999 wild-cluster bootstrap replications.

Table 3 reports the results. For the probability of downward financial support, the baseline coefficient is 0.0735 and the conventional clustered p-value is 0.0034; the result remains significant at the 1% level under the wild cluster bootstrap. For the transfer amount, the policy coefficient is 0.5076 and statistical significance is also unchanged. As a complementary test, we conduct within-province constrained randomization inference at the city level. The resulting p-values are 0.0036 for transfer incidence and 0.0125

for transfer amount, both below 5%. Thus, alternative finite-sample inference procedures leave the sign and statistical significance of the estimated policy effect essentially unchanged[3].

Table 3. Estimates under Alternative Inference Methods

Variable	Any financial support to children	Amount of financial support to children
Integrated care policy	0.0735*** （0.0246）	0.5076** （0.2071）
Conventional clustered p-value	0.0034	0.0157
Wild cluster bootstrap p-value	[0.0041]	[0.0127]
Within-province randomization p-value	[0.0036]	[0.0125]
Controls	Yes	Yes
Observations	24,140	24,140

Note: Standard errors clustered at the city level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

5.2.3 Random Permutation of Treatment Status

To assess whether the baseline result is driven by the particular set of pilot cities, we conduct a within-province constrained permutation test. Each permutation uses the same sample, controls, and fixed effects as the baseline model and randomly reassigns city treatment status 9,999 times, generating an empirical distribution under placebo treatment assignments, as shown in Figure 2. The actual policy coefficient for transfer incidence is 0.0735, clearly located in the right tail of the permutation distribution, with a randomization-inference p-value of 0.0036. The actual coefficient for transfer amount is 0.5076 and is likewise in the right tail, with a p-value of 0.0125. The baseline results are therefore unlikely to be driven by an accidental combination of a small number of pilot cities.

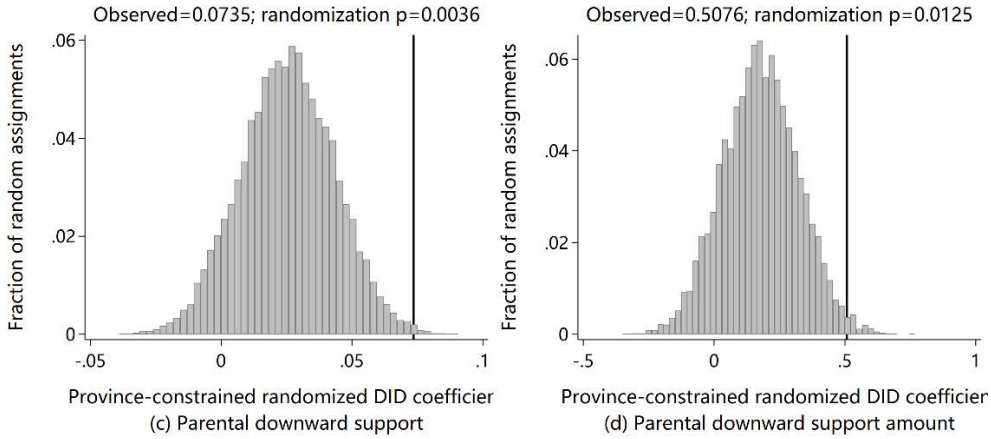

Figure 2. Within-Province Constrained Random-Permutation Test

[3] The wild cluster bootstrap primarily tests the finite-sample robustness of statistical inference under clustered errors, whereas the within-province constrained randomization inference mainly assesses whether the results are driven by the particular combination of treated cities.

5.2.4 Placebo Tests Using Fictitious Policy Dates

To further rule out spurious significance caused by random factors, we follow Bertrand et al. (2004) and conduct placebo tests. We assign fictitious policy dates of 2013 and 2015 and re-estimate the policy effect using only observations from before the actual policy. If significant effects appear before the true policy date, the baseline estimates could reflect pre-existing differential changes between treatment and control groups or other earlier factors.

Table 4 reports the results. When 2013 is used as the fictitious policy date, the estimated coefficients are -0.0110 and -0.1357 and neither is statistically significant. When 2015 is used, the coefficients are -0.0027 and -0.0364, with p-values of 0.9430 and 0.9094. All four estimates are statistically insignificant and their 95% confidence intervals include zero. Thus, no placebo policy effect is detected before the actual pilot. The positive baseline estimates are unlikely to be explained by pre-existing changes between the two groups or by an artificially advanced policy date.

Table 4. Placebo Tests with Fictitious Policy Dates

Variable	Any financial support to children		Amount of financial support to children	
	2013	2015	2013	2015
Placebo policy effect	-0.0110	-0.0027	-0.1357	-0.0364
City-clustered SE	（0.0547）	（0.0372）	（0.4448）	（0.3197）
p-value	0.8415	0.9430	0.7608	0.9094
95% CI	[-0.1193, 0.0974]	[-0.0763, 0.0710]	[-1.0165, 0.7450]	[-0.6694, 0.5965]
Observations	12,070	18,105	12,070	18,105
Cities	121	121	121	121

Note: The 2013 placebo specification uses only the 2011 and 2013 waves. The 2015 placebo specification uses the 2011, 2013, and 2015 waves. Neither uses the post-policy 2018 wave.

5.2.5 Controlling for Other Policy Interventions

Some treatment areas also participated in long-term care insurance (LTCI) pilots during the sample period. Because LTCI provides formal care for older adults with disabilities, it may affect children's transfer decisions and confound the estimated effect of integrated medical and elderly care. We therefore add an LTCI-pilot indicator to the baseline model and re-estimate the regressions. The coefficients on the integrated medical and elderly care pilot are 0.0952 and 0.6693, both significant at the 1% level. Thus, after accounting for the LTCI program, the pilot continues to increase intergenerational transfers and the conclusion remains consistent with the baseline results.

Table 5. Robustness to Long-Term Care Insurance Pilots

Variable	Control for LTCI pilot		Exclude LTCI-pilot cities	
	Any support (1)	Amount (2)	Any support (3)	Amount (4)
Integrated care policy	0.0722***	0.4935**	0.0952***	0.6693***
	(0.0252)	(0.2138)	(0.0245)	(0.2114)
LTCI pilot	0.0210	0.2186	—	—
	(0.0478)	(0.4037)	—	—
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.3754	0.4064	0.3784	0.4095
N	24,140	24,140	22,404	22,404

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

5.2.6 Alternative Outcome Transformations

Because downward-transfer amounts contain many zeros and are right-skewed, the baseline estimates may depend on the transformation of the outcome. As a robustness check, we replace the IHS-transformed amount with ln(1+x) and also consider the original nonnegative amount, as reported in Table 5. With ln(1+x), the pilot coefficient is 0.4573 and has the same statistical significance as in the baseline regression. The main conclusion is therefore robust to alternative outcome transformations.

5.3 Heterogeneity Analysis

We next examine heterogeneity in the policy effect across household income, age structure, and education.

5.3.1 Income Heterogeneity

Household income reflects both economic resources and the capacity to manage medical and elderly care risks. For households with limited resources, such needs impose tighter budget constraints, so improvements in service integration and accessibility may have greater marginal value. To examine whether the policy effect follows an income gradient, we divide households into low-, middle-, and high-income groups based on tertiles of total household income in 2015, before policy implementation.

Table 6 shows that among low-income households, the estimated effects on transfer incidence and amount are 0.1103 and 0.8267, both significant at the 5% level. Among middle-income households, the coefficient on transfer incidence is 0.0933 and significant at the 10% level, while the amount effect is not statistically significant. Neither coefficient is significant among high-income households. For both outcomes, the point estimates decline as household income rises. The pilot's positive effect on downward financial support therefore weakens with household income.

Table 6. Heterogeneity by Household Income

Variable	Low income		Middle income		High income	
	Any support (1)	Amount (2)	Any support (3)	Amount (4)	Any support (1)	Amount (2)
Integrated care pilot	0.1103**	0.8267**	0.0933*	0.6134	0.0553	0.4209
	(0.0432)	(0.3650)	(0.0545)	(0.3711)	(0.0398)	(0.3788)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.4126	0.4538	0.3700	0.3996	0.4404	0.4827
N	4,485	4,485	4,565	4,565	4,324	4,324

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

5.3.2 Heterogeneity by Household Age Structure

The life-cycle stage of household members may affect both medical and elderly care needs and the room for resource reallocation. When average household age is higher, medical, nursing, and elderly care needs may be more rigid, so additional resources are more likely to be used for the household's own care needs. Relatively younger older households are at an earlier stage of later life and have greater flexibility in reallocating resources. We therefore divide the sample according to whether the average age of observed household respondents in 2015 is below 70 or at least 70.

Table 7 shows that among households with an average age below 70, the estimated effects on transfer incidence and amount are 0.0715 and 0.4766, significant at the 1% and 5% levels, respectively. For households with an average age of 70 or above, both coefficients are positive but not statistically significant. The resource-allocation effect of the policy is therefore concentrated among relatively younger households with greater allocation flexibility.

Table 7. Heterogeneity by Household Age Structure

Variable	Average age <70		Average age ≥70	
	Any support (1)	Amount (2)	Any support (3)	Amount (4)
Integrated care pilot	0.0715***	0.4766**	0.0834	0.6447
	(0.0268)	(0.2083)	(0.0341)	(0.3070)
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.4139	0.4539	0.4124	0.4601
N	18816	18816	5324	5324

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

5.3.3 Education Heterogeneity

Average household education reflects human capital and the ability to obtain, identify, and use

information about medical and elderly care services. Less-educated households may face greater information asymmetry in acquiring health information, identifying specialized services, and allocating market-based care resources, making them more dependent on improvements in the public service system. We therefore group households according to whether the average education category of observed respondents in 2015 reaches the senior-high/secondary-vocational level.

Table 8 presents the heterogeneous effects of the integrated medical and elderly care pilot by household education level. The results show that, among households with average education below senior high school or secondary vocational education, the estimated effects on transfer incidence and amount are 0.0750 and 0.4946, both significant at the 1% level. Among households at or above the senior-high/secondary-vocational level, neither policy coefficient is statistically significant. The household resource-allocation effect is therefore concentrated among households with relatively low average educational attainment.

Overall, the effect of integrated medical and elderly care on downward financial support varies systematically across household characteristics. The effect generally declines as income rises, is concentrated among relatively younger older households, and is stronger among households with lower average education. These patterns suggest that the policy's household resource-allocation effect depends on resource constraints and is strongest where economic resources are limited, reallocation is more flexible, and access to information and care services is more constrained.

Table 8. Heterogeneity by Household Education

Variable	Lower education		Higher education	
	Any support (1)	Amount (2)	Any support (3)	Amount (4)
Integrated care pilot	0.0750***	0.4946***	0.0150	-0.9584
	(0.0238)	(0.1877)	(0.0534)	(0.5167)
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.4100	0.4501	0.4908	0.5077
N	22780	22780	1360	1360

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

6. Further Analysis

6.1 Medical-Risk Constraints and Household Resource Allocation

To examine whether pre-policy medical-risk constraints shape the resource-allocation effect of the pilot, we measure medical burden as the ratio of household out-of-pocket medical spending to total consumption in 2015. After standardizing this measure, we interact it with the policy variable. Because medical-burden data are missing for some observations, we first re-estimate the baseline model on the common sample of 15,804 observations to separate changes in sample composition from the interaction effect.

Table 9 reports the results. Columns (1) and (3) show baseline estimates on the common sample for transfer incidence and amount. The policy coefficients are 0.0972 and 0.7552, both significant at the 1% level and consistent with the main results. Columns (2) and (4) add the interaction between the policy and pre-policy medical burden. The estimated policy coefficients remain positive and significant, at 0.0965 and 0.7486. The interaction terms indicate that the policy effect becomes stronger as pre-policy medical burden rises. Because the burden measure is standardized, Column (2) implies that a one-standard-deviation increase in pre-policy medical burden raises the policy's effect on the probability of downward support by about 0.99 percentage points. Column (4) similarly shows a larger increase in transfer amounts among households with higher pre-policy medical burden.

These results show that the policy's resource-reallocation effect is closely related to households' initial exposure to medical risk. The heavier the pre-policy medical burden, the stronger the response of downward financial support and the greater the marginal benefit of improved formal services. Better integrated medical and elderly care reduces the need to reserve resources against major illness and disability risks, releasing precautionary savings that can then be transferred to children.

Table 9. Policy Effects by Pre-Policy Medical Burden

Variable	Any downward support (1)	Any downward support (2)	Downward support amount (3)	Downward support amount (4)
Integrated care policy	0.0972*** （0.0315）	0.0965*** （0.0315）	0.7552*** （0.2526）	0.7486*** （0.2536）
Policy × pre-policy medical burden	—	0.0099*** （0.0014）	—	0.0830*** （0.0121）
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.3775	0.3776	0.4074	0.4075
Observations	15804	15804	15804	15804

Note:Standard errors clustered at the city level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

6.2 Structural Features of Downward Resource Allocation

The preceding results show that integrated medical and elderly care can expand household budget space by reducing expected health risks and thereby increase total downward support. Aggregate increases, however, do not reveal the form or contractual structure through which released resources reach children. We therefore decompose downward support along two dimensions: resource form (cash versus in-kind) and transfer frequency (regular versus non-regular). Table 10 reports the estimates.

For transfer form, Columns (1) and (2) of Table 10 show that the pilot significantly increases both cash and in-kind downward support. Cash transfers provide highly liquid resources that can meet diverse needs such as housing, education, or childrearing, while in-kind support can directly reduce children's living costs.

When the policy relaxes the overall budget constraint of older households, parents' capacity to transfer resources rises broadly, so released resources appear in both cash and in-kind forms rather than simply substituting one for the other.

Transfer frequency shows clearer structural heterogeneity. In Panel A, the estimated effect on the probability of non-regular transfers is 0.0649 and significant at the 1% level, while the coefficient for regular transfers is 0.0131 and statistically insignificant. Panel B, which uses transfer amounts, shows a similar pattern. The policy effect is therefore concentrated in non-regular transfers.

Table 10. Effects of the Pilot on the Structure of Downward Intergenerational Financial Support

Panel A. Probability of Downward Transfers

Variable	Transfer form		Transfer frequency	
	Cash (1)	In-kind (2)	Regular (3)	Non-regular (4)
Integrated care policy	0.0563** （0.0266）	0.0551*** （0.0179）	0.0131 （0.0217）	0.0649*** （0.0225）
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.3610	0.3458	0.2915	0.3597
Observations	24098	24098	24098	24098

Panel B. Amount of Downward Transfers

Variable	Transfer form		Transfer frequency	
	Cash (1)	In-kind (2)	Regular (3)	Non-regular (4)
Integrated care policy	0.3882* （0.2223）	0.3839*** （0.1275）	0.0852 （0.1594）	0.4533** （0.1860）
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R^2	0.3920	0.3509	0.2984	0.3842
Observations	24098	24098	24098	24098

Note: Panel A reports estimates for the probability of different types of downward financial support, and Panel B reports the corresponding transfer amounts. Standard errors clustered at the city level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Regular and non-regular transfers imply different commitment costs and risk-retention strategies. Regular transfers are relatively rigid and involve long-term commitments, often corresponding to stable recurring expenditures. Non-regular transfers are more flexible and can be adjusted in response to specific needs. The pilot improves service conditions and risk expectations but does not create a permanent new

income stream. Because long-term health risks remain, older households are likely to retain some precautionary savings even after releasing part of their reserves. Compared with fixed long-term commitments, non-regular transfers carry lower commitment costs, making them a more attractive way for parents to provide flexible, state-contingent support to children.

7. Conclusions

Using the national integrated medical and elderly care (IMEC) pilot program in China as a quasi-natural experiment and panel data from the China Health and Retirement Longitudinal Study (CHARLS 2011–2018), this study investigates how formal public care provision influences downward financial transfers within older households. The empirical results demonstrate that the IMEC policy significantly increases both the likelihood and the magnitude of downward financial transfers from older parents to their adult children. Mechanism analyses reveal that this effect operates primarily by mitigating exposure to health-related financial risks and releasing precautionary savings, with additional financial support concentrated in flexible, non-regular transfers. Furthermore, heterogeneity tests show that these positive spillover effects are most pronounced among socioeconomically disadvantaged households, including low-income and less-educated older adults.

These findings offer several key policy implications. First, the expansion of formal integrated care does not crowd out private family support; rather, by dampening precautionary saving motives against health shocks, public care provision relaxes household liquidity constraints and enables older parents to assist the younger generation. Policymakers can leverage this crowd-in effect to mitigate the economic pressures faced by younger cohorts—such as housing, childrearing, and career development costs—thereby fostering intergenerational resource sharing. Second, given that the spillover effects are disproportionately concentrated among socioeconomically vulnerable households, expanding IMEC coverage to primary-level health providers and less-developed regions can serve as an effective policy instrument to improve social equity and alleviate intergenerational poverty persistence. Finally, coordinating IMEC reforms with complementary social safety nets, such as Long-Term Care Insurance (LTCI) and basic medical insurance, can further stabilize households' long-term health expectations and optimize the efficiency of public resource allocation.

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