Do Public Transfers Crowd Out Private Transfers to the Elderly? Evidence from Indonesia

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ABSTRACT

This research explores the potential for government transfer programs to replace or 'crowd out' private assistance, with a particular focus on the significant rise in public transfers in Indonesia. Previous studies have not thoroughly examined the relationship between public transfers and the existing network of private transfers. This study adds to the empirical literature on intergenerational transfers by investigating the crowding-out effects between public and private transfers in Indonesia. This research draws on data from wave 5 of the Indonesian Family Life Survey (IFLS-5), with 2,240 selected samples of adult children and elderly parent pairs (dyads). Probit models and ordinary least squares were used to estimate and examine the robustness of the connection between private and public transfers. This study reveals that pension benefits reduce adult children's propensity to transfer income to elderly parents. This finding reinforces the crowding-out effect hypothesis. Meanwhile, social assistance benefits lead to an increased likelihood of adult children transferring finances to elderly parents, creating a crowding-in effect on private transfers due to public transfers in the form of social assistance. The findings indicate that the needs and capabilities of both parents and children are crucial factors influencing the flow of intergenerational transfers.

1. Introduction

An aging population is a global phenomenon that poses significant challenges for social and economic aspects, particularly in fulfilling welfare needs and providing financial support for the elderly. Worldwide, the proportion of people aged 65 and over is projected to increase from 9% to 16% between 2019 and 2050 (UN DESAPD, 2019). In Indonesia, the number of elderly people is expected to rise significantly from 7.2 percent in 2000 to 19.9 percent in 2045 (Badan Pusat Statistik, 2021). The Old Age Dependency Ratio (OADR) has also continued to increase, reaching 17.08% in 2023 (Badan Pusat Statistik, 2023b). The increasing proportion of elderly populations requires effective intergenerational transfer mechanisms to welfare (Mason & Lee, 2018).

According to the National Team for the Acceleration of Poverty Reduction/TNP2K (2018), growing old in Indonesia is a risky life stage for older adults. Approximately 80 percent of the population aged 65 years live in households with per capita consumption below Rp 50,000 per day (TNP2K, 2018). However, public transfers in Indonesia are still limited in scope, with only 10.99 percent of elderly households having social security. The limitations of public transfers to fund the consumption of the elderly result in family support/private transfers playing an important role in the elderly support system. In countries with relatively limited public transfers, such as many countries in South Asia and Southeast Asia, individuals and families face greater pressure to finance their consumption during old age (United Nations, 2019). J. Kim et al. (2017) mention that parents are at greater risk of poverty without financial support from the family. Intergenerational transfers complement recipients' income, a mechanism families use to help generations cope with crises, transitions, and long-term needs. Thus, intergenerational private transfers function as informal safety nets for uninsured households (Albuquerque, 2014; Pelek & Polat, 2022)),

The interaction between public and private transfers is an important focus because they influence each other in providing support to the elderly. This interaction is useful for designing safety nets and evaluating public policies related to redistribution effects (Kananurak & Sirisankanan, 2017). Intergenerational transfer mechanisms that are often neglected can dampen the expected policy impact because adult children contributing income to their parents may adjust their behavior in response to changes in their parents' income (Nikolov & Adelman, 2019). One phenomenon that draws attention is the crowding-out effect, where an increase in public transfers leads to a decrease in private transfers. This condition potentially hinders the increase in total intergenerational support, so elderly welfare does not increase optimally. This raises significant debates in social and economic policies, especially in the context of developing countries such as Indonesia, where the role of families in supporting the elderly is still very dominant. This phenomenon is highly relevant in the context of Indonesia, where families continue to play the primary role in supporting the elderly, despite the government providing various formal social programs.

The theoretical interaction between the distribution of resources among households and public transfers can be unclear, and it has been explored through two primary models: altruism and exchange (Kananurak & Sirisankanan, 2017; Mudrazija, 2016; Nikolov & Bonci, 2020). Barro (1974) and Becker (1974) are among the pioneers in developing the crowding-out hypothesis. This hypothesis suggests that crowding-out may happen when altruistic donor decrease their contributions because public can occur if altruistic donors reduce their transfers because public assistance boosts the income of the recipient group; conversely, crowding-in occurs if donors driven by exchange motives in intergenerational transfers increase family support (Cox, 1987). The possibility of public transfers replacing existing private transfers (crowding out) can hinder the distributive impact of public programs on poverty. A significant and strong crowding-out effect implies altruistic motives for private transfers (Mironova &

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Shenshina, 2021; Nikolov & Adelman, 2019). If private transfer displacement is substantial, the expansion of social protection programs can lead to a loss of social welfare (Nikolov & Bonci, 2020) and weaken distributive effects (Kananurak & Sirisankanan, 2017; Cox et al., 2004).

Some studies on the relationship between public and private transfers find different results. The study results by Imrohoroglu and Zhao (2018) in China, Mukherjee (2018) in America, and Mironova and Shenshina (2021) in Russia explain that family support plays an important role in family welfare and becomes a substitute for the support system provided by the government (public transfer), differing from the findings by Kang and Sawada (2009) that public and private transfers are complementary or result in a crowding-in effect. In contrast, Huda (2020) found that family transfers and coresidency may not replace formal government assistance. Findings related to socioeconomic impact show a greater crowding-out effect in poor families than in wealthier ones (Nikolov & Bonci, 2020). This effect is significant only when it comes to individual public transfers, as public transfers at the household level do not substantially diminish private transfers (Pelek & Polat, 2022)

The urgency of this research stems from the growing elderly demographic in Indonesia, demanding a deeper understanding of how public and private transfers interact and impact elderly welfare. Additionally, effective social policy must optimize the roles of both types of transfers without negatively substituting one for the other. To highlight the evolving dynamics of intergenerational transfer of family support in response to the shift in public assistance, it is essential to analyze the flow of resources within families, encompassing both downstream transfers (from parents to children) and upstream transfers (from children to parents)

There is a notable gap in empirical research specifically addressing the crowding-out effect between public transfers, such as pensions and social assistance, and private transfers in Indonesia's aging population. Most of the literature still focuses on developed countries or has not yet differentiated in detail the various types of public transfers in Indonesia. Moreover, the unique cultural dynamics and family structures of Indonesia have yet to be widely studied within the framework of intergenerational transfers.

This study examines two facets of the crowding-out response: (1) the probability of receiving private transfers, known as the extensive margin, and (2) the magnitude of the crowd-out effect, which considers both the likelihood and the amount of private transfers received.

This study offers significant insights into existing empirical literature on inter-vivos transfers and the potential crowd-out effects between different forms of public transfers, specifically by employing an approach that combines the analysis of both types of public transfers in Indonesia with private transfers in both directions of intergenerational transfer (downstream and upstream transfers), as well as examining how these interactions affect the welfare of the elderly and their implications for social policy. This study is expected to provide new and relevant insights for policymakers in designing more effective and sustainable programs.

2. Literature Review

Private transfers play an important role in reallocating resources, income, and wealth to address lifecycle deficits in the elderly population. The interaction between demographic changes, especially an aging population, intergenerational transfers (public and private transfers), and socioeconomic status differences is developed from the model (Mason et al., 2006):

$$C - y' = (rA\text{-}S) + (tg+ - tg-) + (tf+ - tf-) \quad \ldots\ldots(1)$$

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Equation (1) shows that the lifecycle deficit (C-y'), which is consumption minus income, is financed by net public transfers (tg), net family transfers (tf), and the difference between return to asset (rA) and saving (S). The elderly finance their lifecycle deficit through public transfers, private transfers, or assets/savings. Mason and Lee (2018) found that in low-income countries (Cambodia, India, Indonesia, the Philippines, Thailand, and South Africa), public transfers are very low, covering less than a third and even nearing zero of the lifecycle deficit for the elderly. Consequently, the elderly in these nations depend on financial support from family members across generations to cover their consumption. According to Zhang (2019) intergenerational transfers are expected to decline for low-income older adults but rise for those with higher incomes in response to increased public transfers. This varied impact on different income groups could worsen income inequality among the elderly.

The significance of private transfers has driven economists to investigate their motives. Barro (1974) and Becker (1974) altruism models posit that the donor's welfare is directly linked to the recipient's welfare. In the realm of intergenerational private transfers, adult children support their aging parents, recognizing that their own happiness or utility is partly tied to their parents' well-being, and vice versa. Conversely, the exchange model suggests that donors anticipate some form of return from recipients, such as future payments (Cox et al., 2004).

Differences in the motivation for giving private transfers have implications for the influence of public policy on the provision of public transfers. (Kananurak & Sirisankanan, 2017). If giving is purely motivated by altruism, an increase in public transfers to the elderly could reduce the private transfers from children to parents, potentially having minimal impact on the overall economic well-being of the elderly. If transfers are not solely altruistic, an increase in public transfers might slightly change or even boost the amount of private transfers, thereby significantly affecting the economic well-being of the elderly. Therefore, the effectiveness of public transfers depends on individual responses to them. For individuals motivated by altruism, public transfers neutralize the distributional impact.

The income of the elderly and the level of care received are crucial for financial flows, both upward (to the elderly parent) and downward (from the elderly parent) (Hlebec & Filipovic Hrast, 2018). Restrictions on the transfer-income derivative will have an effect if a one-dollar increase in the pre-transfer income of the recipient reduces the amount of transfers received by one dollar; this is known as the crowding-out effect (Zhang, 2019). From a comparative study perspective, two hypotheses are noteworthy: the crowding-out hypothesis, which anticipates that increased public transfers will lessen the reliance on private transfers, and the crowding-in hypothesis, which posits that if one generation receives particularly generous welfare state support, there might be a rise in private transfers from that generation (Iacovou & Davia, 2019)

Previous research has examined the crowding-out effect and measured the impact of public transfers on effectiveness in addressing poverty, redistributing income, and avoiding the emergence of deadweight loss. According to Mironova and Shenshina (2021), when a country implements passive social policies, an increase in public financial assistance results in a decrease in family financial assistance. In this system, private and public transfers function as substitutes (crowding out). Meanwhile, within the framework of an active social policy, public transfers catalyze private transfers, and the two complement each other. Some effects of crowding out from government transfers include the following: Firstly, the concept of crowding out affects the effectiveness of public transfers and redistribution programs. If total crowding out occurs, government transfer programs have no net effect on beneficiaries' income.

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Secondly, the crowding-out phenomenon is significant for assessing program outcomes. Thirdly, it offers insights into family and household dynamics, such as income sharing and maintaining connections despite living apart (Jensen, 2003).

Mukherjee (2018) in the United States showed that parents who behave altruistically consider all transfers of resources to their children as normal goods; thus, parents with increased social security benefits tend to provide more financial and time support to their children. Conversely, children tend to decrease both financial and time contributions if their parents' social security benefits rise. In Europe, adult children are increasingly substituting intensive time support to elderly parents with public assistance, while focusing on providing less intensive support (Mudrazija, 2016). Meanwhile, Costa-Font et al. (2022) in Spain observed an average 17 percentage point increase in downstream transfers (and a decrease in upstream transfers) among those receiving caregiving allowances, indicating an exchange motive in intergenerational transfers.

Cox et al. (2004) employed a non-linear least squares (spline regression model) to study the Philippines and found that strong derivative transfers only occur among low-income households. The findings suggest that the potential for crowding out is substantial for public transfers aimed at the lower-income bracket, implying that such programs may not succeed if driven by altruism. The same results were also found in Thailand in the research by Kananurak and Sirisankanan (2017), where there were regional differences in crowding-out effects; thus, caution is needed in determining the target households for public transfers to avoid deadweight loss.

Jung et al. (2016) in Korea show that public pension recipients do not increase their overall or food expenditures, as the expansion of public pensions results in crowding out. When parents become recipients of public pensions, financial transfers from adult children decrease, but non-financial help (such as emotional support through communication and visits) does not decline. The crowding-out effect is greater for parents living alone. Mironova and Shenshina (2021) used Logit Regression to show that public transfers substitute for private transfers, with differences in socio-demographic conditions where crowding out in rural areas has a larger proportion of public transfer recipients. A limitation of their study was that all variables analyzed were dichotomous; therefore, the magnitude of the crowding-out effect could not be measured.

Research by {Formatting Citation} In China, examining the impact of public pension transfers reveals a crowding-out effect. It is estimated that a 20% rise in pension income decreases the likelihood of older individuals receiving private transfers by 0.01 in its z-score. Similarly, Nikolov and Adelman (2019) found in China that pension benefits reduce the propensity of adult children to provide financial support to their elderly parents in large middle-income countries, although the crowding-out effect observed is significantly smaller than in previous studies in middle- or high-income countries. Pelek and Polat (2022) found that public transfers at the individual level lead to crowding-out, while public transfers targeting households do not have a significantly neutralizing effect.

Nikolov and Bonci (2020) revealed crowding-out in low- and middle-income countries (LMICs), with a much greater shift from private transfers as a result of social security programs implemented in developing countries; the expansion of social protection programs results in welfare loss. This study suggests that if the goal is poverty alleviation, careful program targeting is necessary, considering potential crowding-out effects. Mason and Lee (2018) found a trade-off between public and private transfers in Asian countries (Cambodia, China, South Korea, and

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Taiwan), but also found unclear relationships between public and private transfers in several countries.

Theoretical background

The basic theoretical model of private transfer motives uses the model developed by Cox (1987). This model considers two individuals, parents and children, each of whom can act as donors and recipients of transfers. In the altruism model, the donor cares about the utility of the recipient, whereas in the exchange model, transfers are carried out with expectations of reciprocity or future rewards. The underlying motives for private transfers have an important impact on the effectiveness of government welfare programs through public transfers. The donor cares about the welfare of the recipient (altruistic), with the following utility function:

$$Ud = Ud\,(Cd, S, V(c, s)) \quad \ldots\ldots (2)$$

Where Ud is the donor's utility, Cd is the donor's consumption, s is the service provided by the recipient (proxied by geographic distance), V is the recipient's utility, and Cp is the recipient's consumption. An altruistic donor means they care about the welfare of the recipient ($\partial U/\partial V > 0$) but also enjoys receiving services from the recipient ($\partial U/\partial s > 0$). The consumption of donors and recipients is assumed to be a normal good. It is assumed that the recipient does not like to provide services, so $\partial V/\partial s = Vs < 0$.
The budget constraint is expressed as follows:

$$Cp \leq Yp - T \quad \ldots\ldots (3)$$
$$Ck \leq Yk + T \quad \ldots\ldots (4)$$

Where Y is the income of the parent (p) and child (k), and T is the transfer from parent to child. This budget constraint is included in the optimization by the parent. In the optimization problem, the donor must also consider that the recipient will only provide more service (s) if compensated with utility in the form of financial transfers ($T > 0$). The change in the child's utility entering a transfer-service relationship with the parent must be non-negative. The threat point utility for the child is

$$Vo = (Yk, 0) \quad \ldots\ldots (5)$$

The donor's transfer motive may be altruistic or exchange-based, depending on whether the non-negativity constraint is binding. If the constraint does not bind, the donor is effectively altruistic; thus, public transfers will be offset by private transfers, referred to as the Becker-Barro neutrality outcome. Conversely, if the constraint binds, transfer behavior is motivated by exchange; thus, private transfers will not be offset by public transfers because the donor expects compensation or reward.

3. Research Method

This study draws on data from wave 5 of the Indonesian Family Life Survey (IFLS-5) to estimate inter-household transfers from parents to adult children (downstream transfer) and from children to parents (upstream transfer). The reason for using IFLS data is that this research requires a dataset on parents and their adult children within a dyadic relationship. The most suitable data for this study were from the IFLS, which are not available from other surveys. Another reason for using IFLS data is that IFLS tracks family splits, as most adult children have moved out of their parents' homes.

The IFLS is a longitudinal survey of Indonesian households and is the most comprehensive survey ever conducted in Indonesia, covering 83 percent of the population. IFLS-5 also provides information on several key socioeconomic characteristics of parents, children, and non-coresident siblings, such as age, gender, marital status, education, occupation, current activities, and employment status of the respondents. IFLS-5 was collected by the RAND with a sample consisting of 15,900 households and 50,580 individual respondents. The data in this study were processed from the raw IFLS-5 data, with a sample of 2,240 parent-child dyads obtained from the 50,580 respondents in IFLS-5. This study focuses on behavioral economics; therefore, the selected data consist of individuals who are parents aged 50 years (pre-elderly) or older and have at least one child aged 15 or older who does not live with them (non-coresidence).

The main dependent variable in this model is financial transfers over the past year, measured in two ways: the probability of making a transfer and the amount of the transfer. The independent variables used are income, wealth, public transfers (such as pension and social assistance recipients), education, distance of residence (as a proxy for services), parental characteristics (age, marital status, gender, number of children, place of residence, health status, living arrangement, kinship pattern), and adult children's characteristics (age, marital status, gender, employment status, frequency of visits to parents).

There are differences in intergenerational transfer patterns between upstream and downstream transfers (K. Kim et al., 2015; Mukherjee, 2018); therefore, this study distinguishes between transfers from parents to children (PTC)—downstream intergenerational transfers — where parents are donors and children are recipients, and transfers from children to parents (CTP) — upstream intergenerational transfers — where parents are recipients and children are donors. The basic empirical model used in this study is as follows:

a. Downstream intergenerational transfers (Parent To children/PTC) -Model 1 Dan *2*

$$Tptc_i = \alpha_0+\alpha_1 pYi+\alpha_2 cYi+\alpha_3 pWpi+\alpha_4 Ppi+\alpha_5 Si+ \alpha_6 EDUC_i + \alpha Xi+ \alpha Zi+ e \quad (5)$$

b. *Upstreams intergenerational transfers (Children to Parent/CTP) -Model 3 and 4*

$$Tctpi = \beta_0+\beta_1 cYi+ \beta_2 pYi+ \beta_3 PWpi+ \beta_4 Ppi+ \beta_5 Si + \beta_6 EDUCi + \beta Xi+ \beta Zi+ ei \quad (6)$$

Where T = financial transfer, pY = parents' income, cY = adult children's income, W = wealth (measured by home ownership), P = public transfer, S = services (proxied by the distance between the child's and parent's residence), X = parents' characteristics, Z = children's characteristics, p = parent, and c = children.

The conclusion of the transfer motive is based on the signs of α_2, α_3, α_5, and α_6 (in PTC) or β_2, β_3, β_5, and β_6 (in CTP). The signs of $\alpha 1$ and $\beta 1$ must be positive, regardless of the transfer motive. If the motive is pure altruism, then $\alpha_2 < 0$, $\alpha_3 < 0$, $\alpha_5 \lesseqgtr 0$, $\alpha_6 \lesseqgtr 0$, and $\alpha_1 - \alpha_2 = 1$ (in PTC) or $\beta_2 < 0$, $\beta_3 < 0$, $\beta_5 \lesseqgtr 0$, $\beta_6 \lesseqgtr 0$, and $\beta_1 - \beta_2 = 1$ (in CTP). If the transfer motive is exchange, then the expected signs are $\alpha_2 > 0$, $\alpha_5 > 0$, $\alpha_3 \lesseqgtr 0$, $\alpha_6 \lesseqgtr 0$ (in PTC) or $\beta_2 > 0$, $\beta_5 > 0$, $\beta_3 \lesseqgtr 0$, $\beta_6 \lesseqgtr 0$ (in CTP). To determine the relationship between private and public transfers, observe β_4. If $\beta_4 < 0$, then public transfers cause *crowding-out*, and if $\beta_4 > 0$, then crowding-in occurs. This study will use two methods of analysis. The first method is probability giving/receiving estimated using a probit model (Models 1 and 3). The second method is estimating the amount of transfer. Since the transfer amount has a positively skewed distribution, it will be transformed into log, and this model will be estimated using the OLS (Ordinary Least Squares) method (models 2 and 4).

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Table 1. Operational Definitions of Variables

Variabel	Description	Proxy
Financial Transfer(TF)	Financial transfer decision	Dummy 1 = receiving/giving financial transfer 0 = not receiving/giving financial transfer
	Amount of Financial Transfer.	Rupiah
Income (Y)	Total monthly income	Rupiah
Wealth (W)	Home ownership by parent	Dummy 1 = owns own home 0 = other
Public Transfer	Pension recipient (PEN): Have pension insurance from formal employment	Dummy PEN 1 = pension recipient 0 = not pension recipient
	Recipients of social assistance from the government, such as the PKH, BLMS, or others	Dummy BOS 1 = social assistance recipient 0 = not a social assistance recipient
Services (S)	Distance measured between the residences of parents and adult children	Ordinal Scale: 1 = living in the same village 2 = living in the same sub-district 3 = living in the same district 4 = living in the same province 5 = residing in another province/country
Education (EDUC)	Years of schooling.	years
AGE		years
Gender (MALE/ FEMALE)	parent (pMALE)	Dummy 1 = male parent 0 = female parent
	Adult child (cFEMALE)	Dummy 1 = female 0 =male
Health status (HEALTH)		1 = very healthy 2 = Fairly healthy 3 = not very healthy 4 = poor healthy
Number of children (pCHILD)	Number of children owned	people
Area residence (pURBAN)		Dummy 1 = lives in a rural area 0 = lives in an urban area

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Variabel	Description	Proxy
Living arrangement (LV)	Arrangement with whom the parent lives in the household	Living with children (LV_A) 1 = if the parent is with their child 0 = if otherwise Living with a spouse (LV_P) 1 = if the parent lives with a spouse 0 = if otherwise
	How often has the child visited their parents in the last 12 months	1 =never 2 = at least once a year 3 = at least once a month 4 =at least once a week 5 = every day
Kinship system	Parents' ethnic group with a patrilineal kinship system (PTL)	Dummy 1 = if from the Batak or Balinese ethni 0 = if from other ethnic group
	Parents' ethnic group with a matrilineal kinship system (MTL)	Dummy 1 = if from the Minangkabau ethnic grou 0 = if from other ethnic group
Marital Status (MARRIED)		Dummy 1 = marital status 0 = other
Employment status (EMPLOYED)		Dummy 1 = employed 0 = other

Source: Author's calculation based on IFLS-5

4. Results and Discussion

Table 2 shows that the financial transfer given by elderly parents to their adult children, known as the downstream transfer, is driven by the exchange motive. This result is drawn from the positive and significant impact of both the donor's income (parents' log-income) and the recipient's income (adult child's log-income) on the likelihood and amount of financial transfers from parents to children. This pattern is also evident in the income transfer derivative for transfer probability PTC less than 1. Yang and Ripoll (2023) and several other studies found that the transfer-income derivative related to parent and child income is relatively small and not equal to 1, so the neutrality hypothesis required in altruism is rejected. The exchange motive suggests that the probability of providing transfers and the amount given largely depend on the donor's (parent's) expectation that the child will repay in the future in various forms (Alia et al. 2017). These findings also support the notion that transfers from children to parents act as a form of old-age security, aligning with the old-age security hypothesis. The results of this study are in agreement with previous research. (Kim et al., 2017; Theerawanviwat, 2014; Witvorapong, 2015).

The varying outcomes regarding the reasons behind financial transfers from children to elderly parents (CTP) indicate a lack of substantial evidence to support the idea that these transfers are motivated by altruism or exchange. This conclusion is based on findings regarding the donor's income variable (log income of the child, LcY) and the recipient's income (log income of the parents), which, although positive, do not significantly impact the financial transfers from children to their elderly parents. Therefore, these financial transfers from children to parents (CTP) are driven more by family norms in the form of the obligation to

respect and care for one's parents. This finding aligns with that of Klimaviciute et al. (2017). Filial duties serve as moral capital that links normative orientation and personal interest, as they hold values that shape children's behavior and are passed down from one generation to the next (Barczyk & Lin, 2021; Kim et al., 2017; Taniguchi & Kaufman, 2017) . The study's results align with Riani et al. (2021), who found that children consistently provide financial support to their parents, regardless of the welfare level of either party. This finding supports the notion that financial transfers from children to parents are not utilitarian but rather align with Kant's deontological theory, which emphasizes acting out of duty when performing a good deed.

Table 2 reveals that the public transfers dummy for pensions has a negative but insignificant impact on financial transfers. The negative coefficient for the pension dummy variable on financial transfers, both from parents to children (PTC) and from children to parents (CTP), suggests that public transfers like pensions may have a crowding-out effect on private transfers, although the evidence is weak. The crowding-out hypothesis argues that in countries with strong welfare programs that provide public transfer assistance, parents will have sufficient income to live independently, resulting in reduced family solidarity. There has been a shift in responsibility from the family to the public solidarity system. Strong welfare programs decrease families' willingness to offer financial support and care services to their elderly parents. The welfare triangle theory indicates that government-provided public care services will have a crowding-out effect on informal care provision (Liang et al., 2023)

The analysis in model 3 concerning financial transfers from children to parents (CTP) supports the conclusions of Nikolov and Adelman (2019), who observed a negative association between the pensioner status of elderly parents and the financial aid they receive from their children (CTP). The result shows a crowding-out effect, where receiving a pension negatively affects the amount received from children. Jung et al. (2016) explain that in South Korea, elderly parents receiving pension programs are unable to increase their total spending on food because the expansion of the pension program results in crowding out of financial transfers from their children. The crowding-out effect means that elderly parents who receive pensions will end up providing more financial support and care time to their children, while children will reduce their financial assistance and caregiving time to parents once the parents have received greater social security benefits (Mukherjee, 2018).

Table 2. Regression Result with Probit and OLS (IFLS data)

Variable	Downstream transfer (PTC)			Upstream transfer (CTP)		
	Model 1		Model 2	Model 3		Model 4
	Probability (dTFptc)	*Marginal Effect*	Amount (LTFptc)	Probability (dTFctp)	*Marginal Effect*	Amount (LTFptc)
Log_Parent's Income	0.017 ***	0.005 ***	0.069	0.003	0.001	0.009
	(0.004)	(0.001)	(0.215)	(0.004)	(0.002)	(0.021)
Log_Child's Income	0.008	0.002	0.028	0.003	0.001	0.012
	(0.004)	(0.001)	(0.191)	(0.005)	(0.002)	(0.022)
Wealth	0.071	0.02	0.148	0.002	0.001	-0.101
	(0.131)	(0.037)	(3.417)	(0.121)	(0.049)	(0.581)
Pension	-0.027	-0.008	-0.243	-0.101	-0.040	-0.240
	(0.166)	(0.048)	(7.308)	(0.153)	(0.062)	(0.746)
Social Ass	-0.192***	-0.054***	-0.726***	0.374	0.145***	1.836***
	(0.074)	(0.020)	(4.737)	(0.067)	(0.025)	(0.305)
Parental Characteristics						
Distance	-0.021	-0.006	-0.056	0.195***	0.077 ***	1.045***
	(0.033)	(0.009)	(1.131)	(0.031)	(0.012)	(0.145)

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Variable	Downstream transfer (PTC)			Upstream transfer (CTP)		
	Model 1		Model 2	Model 3		Model 4
	Probability (dTFptc)	*Marginal Effect*	Amount (LTFptc)	Probability (dTFctp)	*Marginal Effect*	Amount (LTFptc)
Education	0.015	0.004	0.098	-0.033***	-0.013***	-0.147 ***
	(0.092)	(0.003)	(0.668)	(0.009)	(0.003)	(0.042)
Age	0.064	0.019	-0.02	0.204***	0.081***	0.985***
	(0.064)	(0.019)	(2.590)	(0.057)	(0.023)	(0.277)
Age squared	-0.001	-0.00016	-0.00006	-0.001***	-0.001***	-0.007
	(0.0004)	(0.0001)	(0.019)	(0.000)	(0.000)	(0.002)
Male	-0.004	-0.001	-0.045	-0.219***	-0.086***	-1.073***
	(0.077)	(0.023)	(3.241)	(0.072)	(0.028)	(0.348)
Health	0.004	0.001	0.015	0.165***	0.064***	0.801
	(0.044)	(0.0129)	(1.725)	(0.040)	(0.016)	(0.193)
Number of Children (pCHILD)	-0.037 *	-0.011	-0.144**	-0.015	-0.006	-0.096
	(0.019)	(0.006)	(0.562)	(0.016)	(0.06)	(0.077)
Living Arrangement with Children	-0.273	-0.087	-0.959	0.557	0.218***	2.821***
	(0.125)	(0.043)	(3.569)	(0.117)	(0.044)	(0.563)
Living Arrangement with Spouse	0.217	0.058	0.860	-0.435**	-0.162**	-2.037*
	(0.246)	(0.059)	(9.683)	(0.217)	(0.074)	(1.032)
Frequency of Contact	0.174***	0.051	0.438***	0.121	0.049***	0.580***
	(0.039)	(0.012)	(1.131)	(0.036)	(0.014)	(0.170)
Rural	0.156**	0.046 **	0.431**	-0.125**	-0.049**	-0.599**
	(0.067)	(0.019)	(3.430)	(0.060)	(0.024)	(0.289)
Matrilineal	-0.255 *	-0.068 *	-0.748	0.073	0.029	0.361
	(0.137)	(0.033)	(4.602)	(0.114)	(0.045)	(0.573)
Patrilineal	-0.346***	-0.090 ***	-1.036**	-0.604***	-0.236***	-2.790***
	(0.118)	(0.027)	(4.416)	(0.103)	(0.037)	(0.486)
Children's Characteristics						
Education	0.026 **	0.008 **	0.115	0.013	0.005	0.099
	(0.011)	(0.003)	(0.392)	(0.009)	(0.004)	(0.045)
Age	-0.021***	-0.006 ***	-0.073***	-0.007*	-0.003*	-0.030
	(0.005)	(0.002)	(0.268)	(0.005)	(0.002)	(0.022)
Female	-0.221***	-0.065***	-0.900***	0.177***	0.070***	0.914***
	(0.071)	(0.021)	(3.762)	(0.063)	(0.025)	(0.303)
Married	-0.420**	-0.138**	-2.311***	0.308***	0.122***	1.309***
	(0.098)	(0.035)	(4.346)	(0.096)	(0.038)	(0.469)
Employed	-0.317***	-0.098 ***	-1.433***	0.318	0.171***	1.674***
	(0.077)	(0.025)	(3.549)	(0.071)	(0.028)	(0.340)
_cons	-1.944		7.205	-8.566***		-35,432***
	(2,105)		(96,010)	(1,90)		(9,172)

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Variable	Downstream transfer (PTC)			Upstream transfer (CTP)		
	Model 1		Model 2	Model 3		Model 4
	Probability (dTFptc)	*Marginal Effect*	Amount (LTFptc)	Probability (dTFctp)	*Marginal Effect*	Amount (LTFptc)
Number of observations	2,240		2,240	2,240		2240
Wald chi-squared (23) =	228		13.66)a	234.33		15.06)a
Prob>chi2 =	0.0000		0.0000)b	0.000		0.000)b
Pseudo R^2 =	0.1028		0.1242)c	0.0799		0.1095)c

Note: Standard errors in parentheses.
* p<0.1, ** p<0.05, *** p<0.01.
a) F(23,2216) ; b) Prob >F ; c) R-square

Furthermore, public transfers in the form of social assistance strongly suggest a negative link between financial transfers, both downstream transfers (PTC) and upstream transfers (CTP). As shown in Table 2, models 1 and 2, elderly parents who receive public transfers as social assistance are 5.4 percentage points less likely to provide financial transfers to their children (PTC), and the amount of money transferred is also 72.6 percent lower compared to elderly parents who do not receive social assistance (P<0.01). This finding is relevant because social assistance is a conditional cash transfer, where eligibility is based on a means test, requiring recipients to be from families with certain criteria, such as low income or poverty. Elderly parents receiving social assistance belong to poor households facing economic vulnerability or low income; therefore, their probability of providing financial transfers is relatively lower than that of those who do not receive social assistance.

These results are further supported by the findings on upstream transfers in Table 2, Models 3 and 4, which show that elderly parents receiving social assistance have a 14.5 percentage point higher probability of receiving financial support from their children, with the amount received being 183.6 percent higher than that of elderly parents who do not receive social assistance. Therefore, in terms of the marginal effect, it is estimated that, on average, elderly parents who receive social assistance from the government will experience a 72.6 percent decrease in the amount of financial transfers they give (downstream transfer), but an increase of 183.6 percent in the amount of transfers received from their children (upstream transfer) compared to those who do not receive social assistance. This finding contrasts with the results of Costa-Font et al. (2022), who found an average increase of 17 pp in downstream transfers and a decrease of approximately 8.2–8.7 pp in upstream transfers among those who received care allowances from the government in Spain.

The dummy variable for elderly parents receiving social assistance has a negative coefficient in transfers from parents to children (PTC) and a positive coefficient in financial transfers from children to parents (CTP), providing strong evidence that public transfers in the form of social assistance in Indonesia generate a crowding-in effect. Essentially, social assistance does not lessen private support from children to parents; rather, it enhances the financial contributions made by adult children. Government welfare programs through public transfers provide resources to parents as part of a crowding-in process that strengthens, rather than weakens, family solidarity. This finding reinforces the results of (Costa-Font et al., 2022), who showed that public transfers have stronger effects among lower-income families. Mahpudin (2020) explains the need for better alignment between poverty alleviation programs and the capacities of regional institutions.

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Financial transfers are driven by exchange motives; therefore, public transfers, such as social assistance in Indonesia, will have an income redistribution effect. The policy implications of public transfers are influenced by whether individuals act as rational actors or agents. The income redistribution effect of public transfer policy changes can be effective if individuals behave as rational agents, consistent with reciprocity exchange theory. Exchange theory underpins social actions where individuals function as rational agents. Theoretically, if elderly parents receive assistance due to actions based on potential personal benefits, they are acting as rational agents; however, if transfers are made out of adherence to social norms of filial responsibility, indicating altruistic behavior, then they act as rational actors (Caputo 2002).

Public transfer recipients in Indonesia are still relatively low; SUSENAS 2023 data show that only 13 percent of the elderly have access to social protection programs Badan Pusat Statistik, 2023a). Hence, public transfers in the form of social assistance cannot replace family support in the form of financial transfers. The crowding-in effect of public transfers through social assistance indicates that government-provided social assistance has a significant redistribution effect. This is because the average income of working elderly is low, less than 2 million rupiah per month, as more than 80% of the elderly work in the informal sector (Badan Pusat Statistik, 2023). Therefore, social assistance can serve as a safety net for the elderly. With the occurrence of a crowding-in effect in public transfers via social assistance, public transfers in Indonesia complement private transfers. This finding aligns with the conclusion that the relationship between public and private transfers is crowding in (Liu, 2026).

The likelihood of parents providing financial support to their adult children, as well as the amount given, is greatly affected by the characteristics of both parents and children. Parents with higher education levels tend to give more financial aid to their children, while the chance of receiving support from their children decreases. However, the higher the children's education, the more likely the elderly are to provide and receive financial transfers. An increase in life expectancy accompanied by a rise in the average years of schooling is expected to reduce poverty, especially among the elderly (Wibowo & Khoirudin, 2019). The regression results indicate an inverted-U relationship between parents' age and financial transfers (Khan, 2014; Meng et al., 2023). This confirms the life cycle effect, showing that the age of the elderly positively affects both the giving and receiving of transfers. However, the squared age shows a negative relationship with financial transfers, with turning points at 59.4 and 67.5 years for PTC and CTP, respectively. The more children elderly parents have, the probability of receiving transfers decreases by 1.1 pp, and the amount of transfer also decreases by 14.4 percent. Elderly women are more likely to receive transfers from their children than elderly men.

The more frequently children visit their parents, the more likely it is that financial transfers will be given and received. Elderly parents living in rural areas have a higher probability of giving and receiving financial transfers. For parents in matrilineal kinship systems (pMTL), the probability of giving financial transfers to children is 6.8 pp lower than in other systems ($p<0.10$); likewise, the amount given to matrilineal parents tends to be 74.8 percent lower than in other kinship systems ($p<0.10$). A similar pattern is also found among parents in patrilineal kinship systems (pPTL), with a negative relationship and a 1 percent significance; this means that patrilineal parents are about 9 pp less likely to provide financial support than parents from other kinship systems. Female children, as well as those who are married and employed, have a lower likelihood of receiving financial support from parents; however, they are more inclined to offer financial assistance to their parents. This points to an asymmetric gender pattern, where women give more and receive less (Hu, 2017). Gender inequality in both education and labor participation affects income inequality (Siti, 2022).

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5. Conclusion

Public transfers have "crowding out" characteristics that vary according to the type of public transfer and the underlying motives of intergenerational transfers. The interaction between public and private transfers reveals limited evidence of a crowding-out effect for public transfers like pensions, whereas there is strong evidence of a crowding-in effect for public transfers such as social assistance. These findings are consistent with exchange motives, in which the public transfer effect is not easily offset by private transfers; thus, the provision of private transfers is not neutralized by the existence of public transfers. Thus, public transfers in the form of social assistance are effective income redistribution programs because they complement family transfers.

Based on research results on the relationship between public and private transfers, there is a need to strengthen targeted and integrated social assistance programs as social safety nets for poor elderly people, since social assistance can enhance intergenerational solidarity and increase private transfers from children to their parents. Expanding the coverage of social protection programs for the elderly is needed, considering that elderly access to such programs remains low (approximately 13%). This is important for improving the welfare of the elderly, most of whom work in the informal sector with low incomes. Public transfers should be used as a complement, not a substitute, for private transfers in social safety net designs, with due attention to the exchange motive. From a policy perspective, the results suggest that the design of public transfer programs in Indonesia should account for household behavioral responses and existing family support mechanisms.

A limitation of this study is the reliance on IFLS data. Although IFLS data offers a comprehensive survey resource, IFLS 5 is the latest survey published by RAND, which was released in 2016. The most recent IFLS survey has not yet been released. Therefore, it does not reflect the current situation, where various social security programs implemented by the Indonesian government have become extensive. For future research, data updates can be carried out to capture the latest social security programs, and the scope of analysis can be expanded to other relationships—for example, transfers within extended families or transfers to the community—which would provide a more comprehensive description of how the family support system works.

This research can enrich the literature related to intergenerational transfers and human social behavior through the basic principles of behaviorist psychology and economics, update the literature with more recent data, and explore the interactions between public and private transfers. Overall, this study enhances the understanding of how public policies interact with traditional intergenerational support in developing countries.

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