The impact of cash transfers on children outcomes in rural Thailand: Evidence from a social pension reform

Tabea Herrmann, Attakrit Leckcivilize and Juliane Zenker

Leibniz University of Hannover and University of Goettingen

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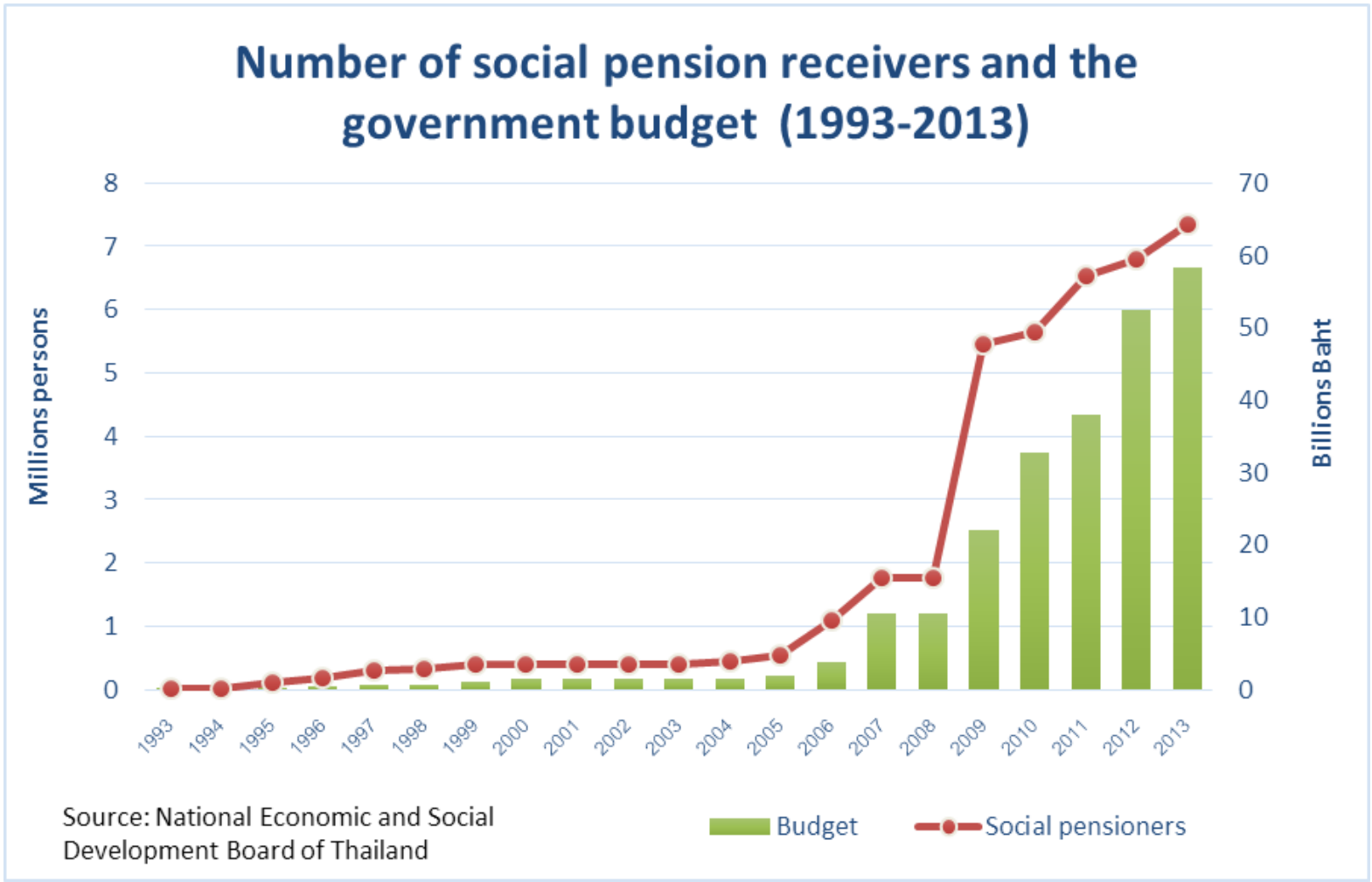
Motivation


Number of social pension receivers and the government budget (1993-2013)
Millions persons
Billions Baht
0
1
2
3
4
5
6
7
8
0
10
20
30
40
50
60
70
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Source: National Economic and Social Development Board of Thailand
Budget
Social pensioners

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- Analysis of pension and child outcomes using panel data
- Study of pension and child outcomes in Thailand
- Among the first few studies to show that a small amount of pension benefit can lead to non-trivial effects

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  - Child labour: e.g. Akresh et al. (2013), Baird et al. (2011), Covarrubias et al. (2012), Robertson et al. (2013)

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$\Rightarrow$ Reductions in child work for girls in households with female pensioners

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  60-69 years old $\Rightarrow$ 600 Baht per month

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  90 years old and older $\Rightarrow$ 1,000 Baht per month

Education Expenditure in 2009

Table 2.6.2. **Household education expenditure in Thailand, by education levels and school type, 2009**
(average THB per head per year)

	Private School				Public School			
	Tuition Fees	Uniform	Books and equipment	Transport	Tuition Fees	Uniform	Books and equipment	Transport
Pre-primary	8 703	980	823	3 612	1 546	708	456	2 317
Primary	11 031	1 315	1 454	4 794	1 976	880	761	2 837
Lower Secondary	10 894	1 507	1 600	5 022	2 562	1 139	1 122	3 580
Upper Secondary	23 643	1 430	1 809	5 898	4 615	1 238	1 416	3 927
Vocational	12 604	1 770	2 303	6 578	4 565	1 443	1 528	4 645
Tertiary	37 683	1 978	3 346	8 510	14 461	1 636	2 459	6 231
Informal Education	2 426	692	559	2 418	-	-	-	-
Total	**13 824**	**1 272**	**1 500**	**5 052**	**5 120**	**970**	**973**	**3 533**

Source: OECD Development Centre's calculation based on Socio-Economic Survey (SES) data and National Statistical Office (NSO).

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  - Children aged 6-18 in 2008 and living in three-generation households
  - 1,220 children and 748 households

Descriptive analysis

Table 1 : School enrollment and child work (percentage)

	Before reform 2008	After reform 2010	2013
Panel A: Enrollment			
Children with newly eligible elderly	81.8	82.3	64.1
Children in control group	79.3	77.0	58.0
All boys	79.0	76.3	58.3
All girls	81.7	82.0	62.6
Panel B: Work status			
Children with newly eligible elderly	9.2	13.5	28.5
Children in control group	9.7	19.7	34.7
All boys	11.0	19.7	35.0
All girls	8.1	14.5	29.2

Note: School enrollment and work status of children aged 6 to 18 in 2008.

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Methodology cont.

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- For the first stage, interacting $PenAge$ with dummy variables for households with female and both male and female pensioners

Methodology cont.

Effects by genders:

$$y_{it} = \theta_0 + \mathbf{X'_{it}}\theta_1 + \theta_2 Pension_{it} + \theta_3 PenF_{it} + \theta_4 PenMF_{it} + D_t + \nu_{it}$$

- y_{it}, X_{it}, D_t are the same as before
- $PenF$ a dummy variable equal to one if the household has female pensioner(s)
- $PenMF$ for households with both female and male pensioners
- Then estimate the model in separate regressions by gender of children in the household
- ν_{it} are the error terms
- For the first stage, interacting $PenAge$ with dummy variables for households with female and both male and female pensioners

$\rightarrow$ Use them as instrumental variables for $PenF$ and $PenMF$ respectively

Results: All sample

Table 2 : The effect of the social pension on child work: Reduced form and 2SLS

	Reduced form			2SLS		
	6-18	6-11	12-18	6-18	6-11	12-18
Eligible HH	-0.062***	-0.024	-0.105***	-	-	-
	(0.023)	(0.022)	(0.035)			
Pension HH	-	-	-	-0.136***	-0.047	-0.226***
				(0.051)	(0.049)	(0.075)
Girl	-0.041***	-0.025**	-0.052*	-0.041***	-0.025**	-0.049*
	(0.016)	(0.012)	(0.027)	(0.015)	(0.012)	(0.027)
Age	-0.095***	-0.020	0.019	-0.095***	-0.019	0.012
	(0.008)	(0.014)	(0.035)	(0.008)	(0.014)	(0.036)
Age^2	0.005***	0.001*	0.002**	0.005***	0.001*	0.003**
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Total HH income	-0.028***	-0.017***	-0.031**	-0.027***	-0.016***	-0.033***
	(0.008)	(0.006)	(0.012)	(0.008)	(0.006)	(0.012)
Land area 2008	-0.002	0.003*	-0.006**	-0.001	0.003*	-0.005*
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
Edu of HH head	-0.005*	-0.002	-0.010*	-0.008**	-0.003	-0.013**
	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.006)
F-stat 1^{st} stage	-	-	-	46.6	38.4	34.5
R^2	0.381	0.067	0.341	0.364	0.055	0.309
Observations	3,387	1,570	1,817	3,387	1,570	1,817
Control vars						
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
HH composition	Yes	Yes	Yes	Yes	Yes	Yes

***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are in parentheses and clustered at the village level. All models control for *Household composition*.

Results: Education by genders

Table 3 : The effect of the social pension on school enrollment by gender: 2SLS

	6-18		6-11		12-18	
	Boys	Girls	Boys	Girls	Boys	Girls
Male Recipient	0.178	-0.002	-0.066	-0.219	0.404**	0.174
	(0.127)	(0.150)	(0.159)	(0.165)	(0.167)	(0.247)
$\Delta FemaleReci$	-0.153	0.035	0.017	0.226	-0.256	-0.047
	(0.163)	(0.169)	(0.170)	(0.210)	(0.240)	(0.261)
$\Delta Male + FemaleReci$	0.107	-0.105	0.004	-0.136	0.152	-0.091
	(0.102)	(0.096)	(0.120)	(0.124)	(0.140)	(0.140)
F-stat 1st stage	36.7	21.5	8.9	11.4	20.1	10.0
R^2	0.355	0.378	0.395	0.374	0.314	0.382
Observations	1662	1723	793	775	869	948
Child and HH vars	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
HH composition	Yes	Yes	Yes	Yes	Yes	Yes
Female Reci	0.023	0.033	-0.049	0.010	0.142	0.126
	(0.103)	(0.068)	(0.099)	(0.087)	(0.162)	(0.096)
Male + Female Reci	0.129	-0.072	-0.044	-0.125	0.295**	0.035
	(0.104)	(0.089)	(0.136)	(0.103)	(0.142)	(0.135)

Note: $\Delta Female(Male + Female)Recipient$ measures the additional effect if a women (men and women) receives the pension after becoming eligible due to the reform compared to a men (the

Results: Child work by genders

Table 4 : The effect of the social pension on child work by gender: 2SLS

	6-18		6-11		12-18	
	Boys	Girls	Boys	Girls	Boys	Girls
Male Recipient	-0.154	-0.069	-0.138	0.063	-0.219	-0.187
	(0.111)	(0.145)	(0.120)	(0.139)	(0.151)	(0.247)
Δ*FemaleReci*	0.015	-0.104	0.058	-0.140	0.002	-0.068
	(0.140)	(0.169)	(0.134)	(0.173)	(0.210)	(0.280)
Δ*Male* + *FemaleReci*	-0.000	0.070	-0.097	0.015	0.037	0.107
	(0.093)	(0.085)	(0.095)	(0.085)	(0.134)	(0.138)
F-stat 1st stage	36.7	21.5	8.9	11.4	20.1	10.0
R^2	0.388	0.345	0.077	0.060	0.333	0.303
Observations	1662	1723	793	775	869	948
Child and family vars	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
HH composition	Yes	Yes	Yes	Yes	Yes	Yes
Female Reci	-0.137	-0.173**	-0.079	-0.078	-0.214	-0.255***
	(0.104)	(0.067)	(0.103)	(0.071)	(0.157)	(0.096)
Male + Female Reci	-0.136	-0.103	-0.174	-0.063	-0.178	-0.148
	(0.100)	(0.070)	(0.113)	(0.060)	(0.144)	(0.118)

***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are in parentheses and clustered at the village level.

Results: Education expenditure

Table 5 : The effect of the social pension on education expenditure

	Log (All)	Share (All)	Log (Genders)	Share (Genders)
Pension HH	0.619	0.030*	-	-
	(0.396)	(0.017)		
Male Recipient	-	-	1.230*	0.049*
			(0.738)	(0.028)
HH income (lagged)	0.281***	0.001	0.267***	0.001
	(0.087)	(0.003)	(0.088)	(0.003)
Land area in 2008	0.050***	0.000	0.050***	0.000
	(0.012)	(0.001)	(0.012)	(0.001)
Education of HH head	0.082***	0.002**	0.082***	0.002**
	(0.031)	(0.001)	(0.031)	(0.001)
$\Delta FemaleRecipient$	-	-	-1.029	-0.033
			(0.862)	(0.033)
$\Delta Male + FemaleRecipient$	-	-	0.168	0.011
			(0.519)	(0.019)
F-stat 1^{st} stage	56	56	28	28
R^2	0.165	0.082	0.164	0.081
Observations	2,121	2,121	2,120	2,120
Control vars	Yes	Yes	Yes	Yes
Female Recipient			0.193	0.016
			(0.474)	(0.020)
Male + Female Recipient			0.354	0.026
			(0.527)	(0.022)

Note: Pension HH indicates whether a household member receives the pension after becoming eligible due to the reform).

Results: Other expenditures

Table 6 : The effect of the social pension on other expenditures

	Total (Log)	Food (Log)	Food (Share)	Non food (Log)	Non food (Share)	Health (Log)	Health (Share)
Pension HH	-0.127	-0.106	0.001	-0.177	-0.032	-0.341	-0.004
	(0.101)	(0.098)	(0.028)	(0.139)	(0.028)	(0.375)	(0.005)
HH income (lagged)	0.194***	0.155***	-0.020***	0.253***	0.020***	0.075	-0.000
	(0.019)	(0.019)	(0.006)	(0.026)	(0.005)	(0.078)	(0.001)
Land area 2008	0.021***	0.018**	-0.001	0.025***	0.001	0.019	-0.000
	(0.007)	(0.007)	(0.001)	(0.007)	(0.001)	(0.014)	(0.000)
Edu of HH head	0.040***	0.025***	-0.006***	0.051***	0.004**	0.054**	0.000
	(0.006)	(0.006)	(0.002)	(0.009)	(0.002)	(0.024)	(0.000)
F-stat 1^{st} stage	56	56	56	56	56	56	56
R^2	0.252	0.261	0.153	0.179	0.086	0.040	0.034
Obs	2,121	2,121	2,121	2,121	2,121	2,121	2,121
Control vars	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Pension HH indicates whether a household member receives the pension after becoming eligible due to the reform).

Robustness Check 1

Table 7 : 2SLS estimation of the effect of the social pension on child outcomes with alternative sample

	Alternative cohort definition		HH with oldest member 50-70		
Dependent variable	12-17	12-19	6-18	6-11	12-18
School enrollment	0.191**	0.144**	0.107	0.023	0.197*
	(0.082)	(0.070)	(0.070)	(0.081)	(0.105)
Child work	-0.234***	-0.186***	-0.120*	-0.071	-0.177*
	(0.083)	(0.072)	(0.068)	(0.073)	(0.103)
Observations	1584	2041	1923	979	944
Control variables	Yes	Yes	Yes	Yes	Yes

***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are in parentheses and clustered at the village level. All models control for individual and household characteristics as well as for year dummies and the number of male and female household members in separate age groups 0-4, 5-9 ... 65-69,70-79, 80-89 and 90+. Each cell reports estimates of *Pension HH* in separate regressions, where *Pension HH* indicates whether a household member receives the pension after becoming eligible due to the reform.

Robustness Check 2

Table 8 : Placebo analyses: Schooling and child work

	Enrollment			Work status		
	6-18	6-11	12-18	6-18	6-11	12-18
Pension HH	-0.022	-0.017	-0.008	0.066	0.047*	0.112
	(0.065)	(0.073)	(0.098)	(0.055)	(0.026)	(0.107)
Girl	0.016	-0.009	0.039	-0.017	-0.007	-0.024
	(0.023)	(0.022)	(0.040)	(0.017)	(0.007)	(0.035)
Age	0.310***	0.529***	0.280***	-0.124***	0.005	-0.279***
	(0.023)	(0.108)	(0.085)	(0.015)	(0.008)	(0.090)
Age^2	-0.014***	-0.025***	-0.012***	0.007***	-0.000	0.012***
	(0.001)	(0.006)	(0.003)	(0.001)	(0.000)	(0.003)
Total HH income	0.035***	0.005	0.054***	-0.014	0.004	-0.025
	(0.013)	(0.012)	(0.020)	(0.011)	(0.004)	(0.020)
Land area in 2007	-0.001	-0.001	-0.001	-0.001	-0.000	-0.002
	(0.002)	(0.002)	(0.004)	(0.002)	(0.000)	(0.003)
Education of HH head	0.003	0.004	0.005	-0.002	-0.001	-0.007
	(0.004)	(0.004)	(0.006)	(0.003)	(0.001)	(0.006)
F-statistic 1^{st} stage	93.8	58.7	71.8	92.0	59.2	71.0
R^2	0.343	0.358	0.376	0.333	-0.005	0.311
Observations	2085	1000	1085	2098	1020	1078

Pension HH indicates whether a household member receives the pension after becoming eligible due to the 'Placebo' reform in 2008.

Robustness Check 3

Table 9 : Placebo analyses: Expenditure items

	Total (Log)	Educ. (Log)	Educ. (Share)	Food (Log)	Food (Share)	Non food (Log)	Non food (Share)	Health (Log)	Health (Share)
Pension HH	-0.032	0.201	0.015	-0.113	-0.035	-0.033	0.010	1.145**	0.016
	(0.130)	(0.576)	(0.019)	(0.136)	(0.038)	(0.184)	(0.039)	(0.571)	(0.010)
HH income	0.344***	0.345***	-0.001	0.243***	-0.037***	0.430***	0.040***	0.043	-0.005***
	(0.027)	(0.117)	(0.003)	(0.025)	(0.006)	(0.036)	(0.006)	(0.099)	(0.001)
Land area 2007	0.012*	0.011	0.000	0.012**	-0.000	0.014	0.000	0.024	0.000
	(0.007)	(0.023)	(0.001)	(0.006)	(0.001)	(0.010)	(0.001)	(0.022)	(0.000)
Educ. of HH head	0.036***	0.056*	0.002	0.019***	-0.006***	0.045***	0.004**	0.069**	0.001*
	(0.007)	(0.031)	(0.001)	(0.007)	(0.002)	(0.010)	(0.002)	(0.032)	(0.001)
F-stat 1^{st} stage	75.2	75.2	75.2	75.2	75.2	75.2	75.2	75.2	75.2
R^2	0.324	0.233	0.123	0.195	0.105	0.267	0.093	0.028	0.034
Obs	1,282	1,282	1,282	1,282	1,282	1,282	1,282	1,282	1,282
Control vars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Pension HH indicates whether a household member receives the pension after becoming eligible due to the 'Placebo' reform in 2008.

Conclusion & Policy Discussion

- Social pension raises school enrollment of older children in Thailand and reduces child work
- Increase in schooling (reduction of work) particularly due to male (female) pensioners
- Households with pensioners (esp. male) invest more money in the education of their children
- **Policy discussion**
- Given effects on children schooling and work and fiscal constraints, should Thai government move back to targeted programme?
  - If yes, what would be the 'New' criteria for poor elderly?

Any Suggestions are more than welcome

Thank you