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The Impact of a Universal Allowance for Older Persons on Labor Force Participation: The Case of Thailand

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Abstract

This paper assesses the impact of the 2009 implementation of a universal Monthly Allowance for Older Persons on the labor force participation of older workers in Thailand. Using the Thai Household Socio-Economic Survey, we evaluate the effect of the program implementation on labor force participation for older workers aged 61 to 75 years old over the years 2007 to 2011. We apply a standard probit regression to model the work decision and a propensity-score matching approach to address concerns regarding self-selection and endogeneity in the estimation. The expansion of the social pension for the elderly from a targeted to a universal program starting in 2009 has little impact on the overall labor force participation of older persons, but is associated with a decrease in labor force participation by 6 to 7 percent among elderly from low-income households in areas outside the Bangkok metropolis.

Keywords

Labor force participation, older workers, pension, Thailand

JEL Classification

D04, H55, J21, J26

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Introduction

In countries where employment is largely formalized and the retirement age is enforced, the introduction of old-age cash benefits has little impact on labor force participation of older persons. However, in a developing economy in which the majority of workers are employed in the informal sector with little or no economic security provided by government or private pensions, a mandated age of retirement may have little meaning for most workers. In this case, it is plausible that social assistance programs for older persons can have a significant impact on the labor force participation of older workers.

Thailand is a rapidly aging society with approximately two-thirds of its labor force working in the informal economy. Currently, 12.9 percent of Thailand's population is classified as elderly and, according to the National Economic and Social Development Board (NESDB), Thailand began moving towards an aging society in 2004 and is expected to be a fully aging society by 2024. With Thailand's rapidly aging population and large informal sector where a mandatory retirement age does not apply, Thailand makes a good case to study the impact of government social policy on labor force participation of older workers.

The purpose of this paper is to evaluate the impact of the 2009 implementation of the universal Monthly Allowance for Older Persons on the labor force participation of older workers (aged 61-75) in Thailand. This study utilizes three rounds of the Thai Household Socio-economic Survey (SES), including 2007, 2009 and 2011. Using probit regression and propensity-score matching approaches, this study finds that the introduction of the universal Monthly Allowance for Older Persons had little to no impact on the labor supply of older persons as a whole. However, the introduction of the universal pension reduced the labor supply of low-income older workers in areas outside of Bangkok by 8 percent, effectively allowing this group of largely informal economy workers to "retire".

The paper is organized as follows: section 2 gives a brief background of old-age coverage and the extension of the universal Monthly Allowance for Older Persons in Thailand. Section 3 reviews the literature on labor force participation impacts of the extension of old-age pensions. Sections 4 and 5 introduce the data and methodologies used to estimate the impact of the Monthly Allowance for Older Persons on the labor force participation of older workers. Sections 6 and 7 present the results and conclusions, respectively.

Background

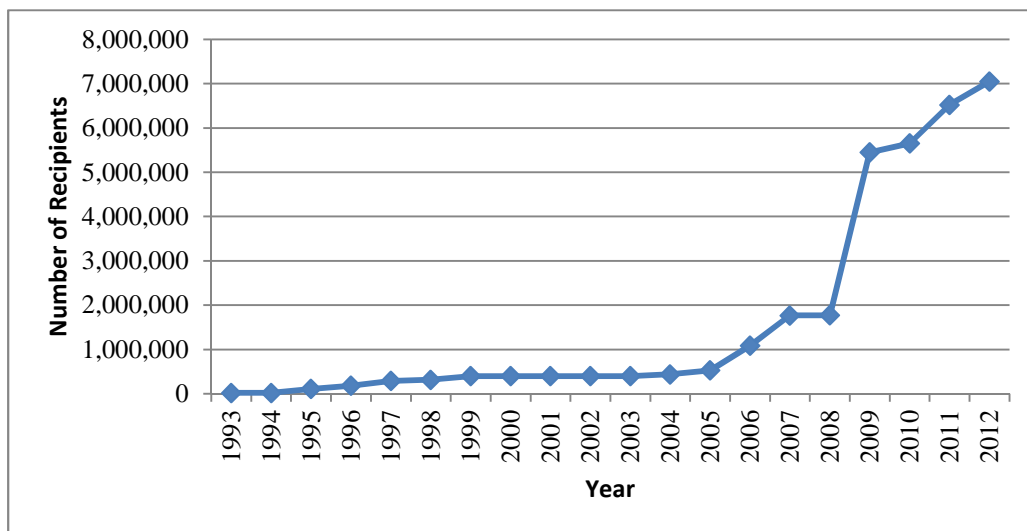
Thailand is a developing country in which two-thirds of its workers work in the informal sector. Until recently, informal sector workers had little access to financial security in old age. Social security and the civil servant old-age schemes are available only to formal sector workers in private firms and the Government, respectively. Informal sector workers were excluded from both schemes, even on a voluntary basis.¹

¹ The Royal Thai Government recently enacted Section 40 of the Social Security Act in 2011, which allows informally employed workers between the ages of 15 and 60 to apply for and pay into a voluntary social security program. One of the package options includes an old-age lump-sum payment. The individuals analyzed in this study are not affected by this voluntary social security program since they were above the eligibility age at the time of implementation in 2011.

In the past, Thai elderly largely relied on extended family to provide old-age security. However, the rapidly aging population and low birth rates mean that the elderly will have fewer family resources to turn to in old age. In order to address the lack of old-age protection and the demographic realities in Thailand, the Government introduced a monthly allowance for the elderly in 1993. In the beginning, the program’s aim was to assist poor older persons by granting 200 baht per month (Jitapunku and Wivatvanit, 2009). The cash benefit payment increased to 300 baht per month in 1999 (Foundation of Thai Gerontology Research and Development Institute 2013). The Old Age Act, B.E. 2546 (2003), was enforced in 2004, which included a mandate to establish a universal non-contributory allowance for older people. The implementation of the universal Monthly Allowance for Older Persons began in 2009 as a part of the 2nd National Plan for Older Persons (2001-2021). The universal allowance was initially set at 500 baht per month for Thai nationals over the age of 60 who received no other Government aid. The amount was adjusted upwards in 2011 to 600 to 1,000 baht per month depending on age (Schmitt, Sakunphanit and Prasitsiriphol, 2013).

The number of elderly covered by the Monthly Allowance for Older Persons increased from 24.4 percent in 2007 to 81.4 percent in 2011 (Knodel et al. 2013). Figure 1 below shows the increase in the number of people covered by the Monthly Allowance for Older Persons from 1993-2012.

Figure 1. Monthly Allowance for Older Persons Recipients, 1993-2012



Source: Department of Local Administration Bangkok and Pattaya, 2013

A recent report of the Situation of Thai Elderly 2013 (Foundation of Thai Gerontology Research and Development Institute 2013) indicates that 7,342,026 people—over 80 percent of the total number of older persons in Thailand— participated in the program in the year 2013. Thus, program coverage is now near universal.

One of the criticisms of the Monthly Allowance for Older Persons is that the benefit amount is very low and likely has little impact on the welfare of the elderly. Table 1 illustrates the magnitude of the monthly allowance relative to mean per capita household monthly incomes calculated from the 2007, 2009 and 2011 SES surveys for both the entire sample used for analysis and for a low-income sample that includes households in the bottom 40 percent of per capita household income.

Table 1. Magnitude of the Monthly Allowance for Older Persons

Year	Benefit Level	Overall		Bottom 40% Per Capita Household Income	
		Mean Per Capita HH Income (baht)	Benefit as % of Mean PC HH Income	Mean Per Capita HH Income (baht)	Benefit as % of Mean PC HH Income
2007	500	6,164	8.1%	2,083	24.0%
2009	500	6,889	7.3%	2,408	20.8%
2011	600-1,000*	7,645	8.4%	2,677	24.1%

*Calculations use 2012 average payment of 645 baht (Suwanrada, 2012).

Between 2007 and 2011 the monthly allowance provided by the social pension program represented only 7-8 percent of per capita household income. However, among the poorest 40 percent of households, the allowance was more substantial, representing 20-24 percent of per capita household income. Overall, the cash transfer amount in Thailand is low compared to programs in other countries. For example, in the South Africa, the social pension for the elderly provides more than twice the median per capita income and is considered a significant source of income for one-third of all households in the country (Ardington et al. 2009). Despite the relatively low benefit level, the 2011 Survey of Older Persons in Thailand (NSO 2012) reports that in addition to money provided by children, the Monthly Allowance for Older Persons has gained in prominence as a main source of income for older persons in Thailand. In fact, 14 percent of elderly rural residents and 7 percent of elderly urban residents now use the old-age allowance as their main source of support (Knodel, Prachuabmoh and Chayovan, 2013, p.42).

Related literature

A large body of literature investigates the impact of contribution-based Social Security on labor force participation of older workers (see survey in Hurd, 1997). However, few studies focus on the impact of non-contributory pensions and old-age allowances on labor supply decisions. Results from existing studies are mixed in both developed and developing country contexts.

Two studies address the labor supply impact of the Old Age Assistance (OAA) program enacted in the United States under the Social Security Act in 1935. Parsons (1991) found that the introduction of OAA in the United States led to a dramatic decrease in the labor force participation rate of older men in the years 1930-1960. However, Friedberg (1998) found opposite results, showing that in the case where benefit levels did not increase for a long time, receiving OAA was associated with an increase in the labor force participation rate of the older workers in the United States.

In a cross-sectional data study of South Africa's pension program, Bertrand, Mullainathan, and Miller (2003) found that the pension leads to a decrease in the labor supply of prime-age members of households, especially in a group of male workers who live with female workers and receive the cash transfer. However, Ardington et al. (2009) used panel data to study the impact of the pension and found a small increase in older workers' labor force participation after receiving the pension. Furthermore, it was found that the pension assisted households by reducing credit and childcare

constraints, “which allows prime-aged adults to look for work elsewhere” (Ardington et al. 2009, p.22).

In another developing economy context, Juarez (2010) evaluates the impact of the first non-contributory public pension in Mexico—a state-level transfer program for Mexico Distrito Federal (DF) residents age 70 and older—on private support of the elderly. The results show that the demogrant tends to reduce male labor supply if they live in the same household with women who are qualified for the program. The results provide evidence that the public grant acts as a substitute for private support of the elderly.

Several recent studies, including those by Suwanrada (2009), Sakunphanit and Suwanrada (2011), and Suwanrada and Dharmapriya (2012), have focused on the Monthly Allowance for Older Persons in Thailand. While there is considerable academic interest in the Government’s response to Thailand’s elderly care issues, most studies to date focus on the problems of implementation and administration of the social pension program rather than program impacts. Knodel, Prachuabmoh and Chayovan (2013) provide a qualitative analysis of the 2011 Survey of Older Persons in Thailand and address the role of the universal monthly allowance on material support, but do not directly address the role of the allowance on changes in labor force participation. This paper is the first to utilize a nationally representative survey to provide empirical evidence on the impact of the universal Monthly Allowance for Older Persons scheme on labor force participation decisions of older persons in Thailand.

Data

The data used in this paper are from the Household Socio-Economic Survey (SES) for the years 2007, 2009 and 2011. The SES full survey is conducted every two years by the National Statistical Office (NSO) of Thailand. We combine these three years of surveys to obtain a pooled cross-sectional dataset used for the estimation.

The SES is utilized since this survey measures factors that could affect the labor force participation of older workers in Thailand, including various household and individual characteristics identified in previous research (see for example, Blau, 1998; Blau and Goodstein, 2007; Haider and Loughran, 2001; Hall et al. 2005; Kalwij and Vermeulen, 2005; Purcell and Whitman, 2006; among others). Household characteristics include household location, number of household members, average earnings per earner, and whether the household is primarily engaged in agriculture. Data are also available for individual household members, including sex, age, education, marital status, status as household head, and labor force participation.

The SES surveys conducted between 2007 and 2011 include information on individual enrollment in various health and welfare schemes, including government and state enterprise welfare programs, the Universal Health Coverage (UCS) program, private health insurance, social assistance for people with disabilities, and the social pension for older persons discussed above. The SES surveys conducted between 2007 and 2011 should capture changes in labor force participation decisions due to the implementation of the universal pension scheme starting in 2009.

The official retirement age is 60 years old in Thailand. Thus, the sample is restricted to older workers in Thailand between the ages of 61 and 75 at the time of the surveys in the years 2007, 2009 and 2011. There are 38,584 people in the 2007 to 2011 sample used to evaluate the impact of the universal

pension implementation on labor force participation of older persons. We then focus on the impact of the social pension on labor supply decisions of older people in a low-income sub-sample (households in the lowest 40 percent of per capita household income by region). The number of observations in the subsample is 15,543 people. Tables 1 and 2 provide summary statistics for the relevant variables for

Table 2. Summary Statistics – Full Sample

Variable	Bangkok	Central	North	Northeast	South
Labor force participation	0.25 (0.44)	0.42 (0.49)	0.49 (0.50)	0.50 (0.50)	0.54 (0.50)
<i>Individual characteristics</i>					
Age	66.85 (4.20)	67.2 (4.28)	67.14 (4.26)	66.91 (4.21)	66.9 (4.29)
Years of education	7.61 (4.81)	5.21 (3.28)	5.04 (3.13)	5.15 (3.18)	5.41 (3.50)
Female indicator	0.53 (0.50)	0.55 (0.50)	0.52 (0.50)	0.54 (0.50)	0.51 (0.50)
Married indicator	0.63 (0.48)	0.65 (0.48)	0.67 (0.47)	0.67 (0.47)	0.7 (0.46)
Female*married indicator	0.24 (0.43)	0.27 (0.44)	0.27 (0.44)	0.28 (0.45)	0.28 (0.45)
Household head indicator	0.59 (0.49)	0.61 (0.49)	0.64 (0.48)	0.63 (0.48)	0.63 (0.48)
<i>Household characteristics</i>					
Urban indicator	1.00 (0.00)	0.54 (0.50)	0.60 (0.49)	0.60 (0.49)	0.57 (0.50)
Household size	3.79 (1.90)	3.47 (1.82)	3.15 (1.59)	3.68 (1.81)	3.38 (1.78)
Real income per earner (baht '000)	22.7 (21.71)	10.3 (12.21)	7.83 (10.76)	8.00 (10.92)	11.76 (13.66)
Per capita household real income (baht '000)	14.16 (16.77)	7.65 (46.71)	5.77 (6.08)	5.45 (6.29)	8.04 (7.91)
Agricultural household indicator	0.01 (0.08)	0.13 (0.33)	0.16 (0.37)	0.20 (0.40)	0.21 (0.41)
<i>Pensions and insurance</i>					
Social pension indicator	0.31 (0.46)	0.51 (0.50)	0.56 (0.50)	0.62 (0.49)	0.50 (0.50)
Government welfare indicator	0.29 (0.45)	0.24 (0.43)	0.25 (0.43)	0.24 (0.42)	0.29 (0.45)
Universal health (UCS) indicator	0.58 (0.49)	0.73 (0.44)	0.74 (0.44)	0.75 (0.43)	0.69 (0.46)
Private health indicator	0.04 (0.19)	0.02 (0.14)	0.01 (0.09)	0.01 (0.08)	0.01 (0.11)
Disability pension indicator	0.00 (0.07)	0.01 (0.10)	0.02 (0.12)	0.01 (0.12)	0.01 (0.08)
Observations	1,934	10,972	9,795	11,461	4,431

Note: Standard deviations in parentheses

both the full sample and the low-income subsample by region.

Table 3. Summary Statistics – Low-income Sample

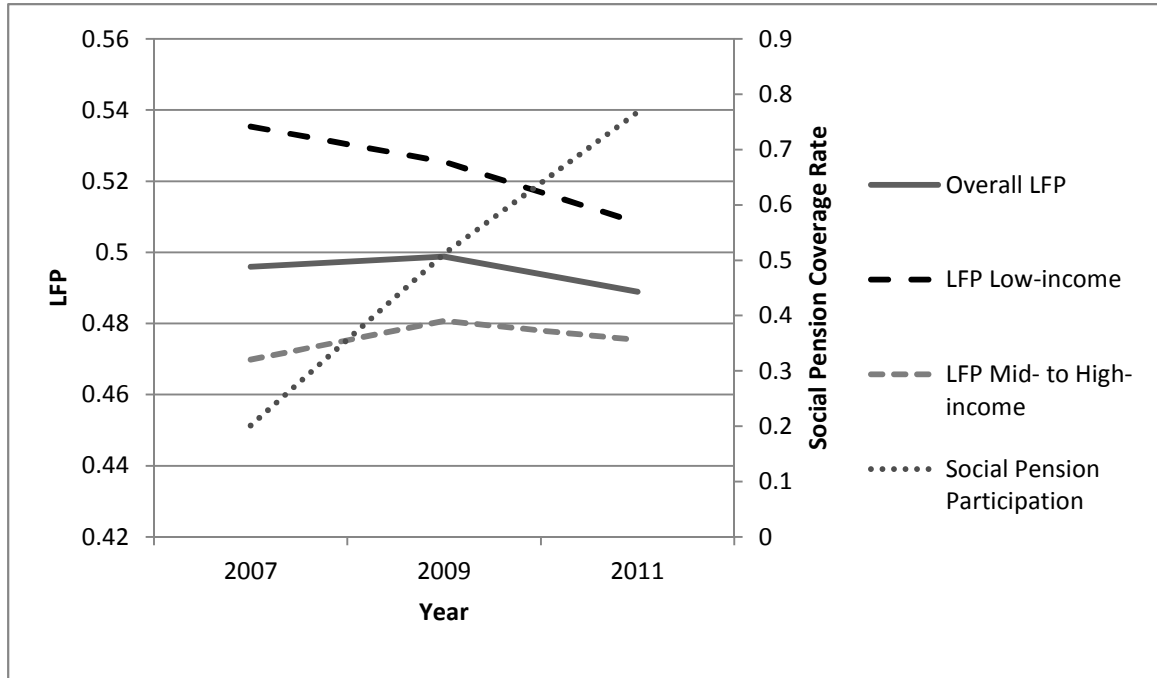
Variable	Bangkok	Central	North	Northeast	South
Labor force participation	0.26 (0.44)	0.44 (0.50)	0.49 (0.50)	0.54 (0.50)	0.54 (0.50)
<i>Individual characteristics</i>					
Age	67.13 (4.14)	67.5 (4.34)	67.39 (4.25)	67.1 (4.27)	66.99 (4.34)
Years of education	5.68 (3.41)	4.15 (1.57)	3.98 (1.32)	4.1 (1.18)	4.2 (1.63)
Female indicator	0.50 (0.50)	0.55 (0.50)	0.51 (0.50)	0.54 (0.50)	0.50 (0.50)
Married indicator	0.62 0.48	0.67 0.47	0.70 0.46	0.70 0.46	0.72 0.45
Female*married indicator	0.22 0.41	0.28 0.45	0.29 0.45	0.31 0.46	0.29 0.45
Household head indicator	0.58 0.49	0.60 0.49	0.62 0.48	0.61 0.49	0.62 0.49
<i>Household characteristics</i>					
Urban indicator	1.00 (0.00)	0.45 (0.50)	0.46 (0.50)	0.45 (0.50)	0.44 (0.50)
Household size	4.16 (2.12)	3.81 (1.84)	3.39 (1.59)	4.13 (1.74)	3.74 (1.87)
Real income per earner (baht '000)	5.46 (1.72)	2.85 (0.86)	2.23 (0.69)	1.95 (0.61)	3.06 (0.99)
Per capita household real income (baht '000)	10.98 (8.73)	4.93 (3.95)	3.5 (3.01)	3.38 (2.55)	5.2 (3.75)
Agricultural household indicator	0.01 (0.11)	0.14 (0.35)	0.22 (0.41)	0.31 (0.46)	0.20 (0.40)
<i>Pensions and insurance</i>					
Social pension indicator	0.39 (0.49)	0.6 (0.49)	0.64 (0.48)	0.71 (0.45)	0.58 (0.49)
Government welfare indicator	0.18 (0.38)	0.10 (0.29)	0.08 (0.26)	0.06 (0.24)	0.14 (0.34)
Universal health (UCS) indicator	0.73 (0.44)	0.89 (0.32)	0.92 (0.27)	0.93 (0.25)	0.84 (0.36)
Private health indicator	0.01 (0.11)	0.00 (0.07)	0.00 (0.04)	0.00 (0.04)	0.00 (0.02)
Disability pension indicator	0.01 (0.08)	0.01 (0.11)	0.03 (0.16)	0.02 (0.14)	0.01 (0.10)
Observations	762	4,445	3,971	4,573	1,798

Note: Standard deviations in parentheses

Note that the social pension indicator variable captures participation in both an earlier pension program targeted to poor elderly persons and the universal pension implemented starting in 2009.

Changes in labor force participation and social pension participation for the overall sample and the low-income sub-sample over the years 2007-2011 are reported in figure 2 below.

Figure 2. Labor Force Participation Rates and Social Pension Take-up Rates



The graph indicates that the overall labor force participation of older persons changed little over the 5-year period. However, the labor force participation rate for low-income elderly appears to have fallen from about 54 to 51 percent. This decrease coincided with the implementation of the universal social pension and a dramatic increase in the social pension coverage rate.

Methodology

Standard probit regressions are used to test the relationships between labor force participation, household characteristics, individual characteristics, and participation in the Monthly Allowance for Older Persons. The probit model takes the following form:

$$Y_i^* = X_i\beta + \mu_i, \forall i = 1, \dots, n$$

$$Y_i = \begin{cases} 1 \\ 0 \end{cases}$$

$$Y_i = 1 \text{ if } Y_i^* > 0 \text{ and } Y_i = 0 \text{ if otherwise}$$

Y_i is binary variable equal to 1 if the i^{th} individual participates in the labor market in the year of survey, and equal to 0 otherwise. This Y_i is determined by the latent variable Y_i^* . X_i is a matrix of explanatory variables, including individual characteristics, household characteristics, and participation in various private and social insurance/pension programs, β is a vector of estimated parameters, and μ_i is the error term.

The probit model used to estimate the determinants of elderly labor force participation takes the form:

$$\Pr(lfp = 1 | X) = f \left(\begin{array}{l} \text{Age, Edu, Female, Married, Married* Female, HH Head,} \\ \text{Urban, HH Size, Income Per Earner, Ag HH,} \\ \text{Social Pension, Govt Welfare, UCS, Private Health Ins, Disability} \end{array} \right)$$

The dependent variable, *lfp*, equals 1 if the individual is in the labor force and 0 otherwise. The independent variable of interest is *Social Pension*, which takes the value of 1 if the individual participates in the targeted program in 2007 or the universal program in 2009 and 2011. Those who do not participate in the social pension scheme receive a 0.

We are concerned that the coefficient estimates from the probit regression could be biased due to program self-selection. During the early implementation of the universal program in 2009 it is possible that elderly who had better access to information about the program and lived closest to administrative units that administered the program were more likely to be early adopters. If early adopters were relatively well-off and the allowance is not necessary to cover basic needs, it is likely that the grant would have little impact on their labor supply decisions. Thus, there is concern that there may be a downward bias (towards zero) on the estimated impact of the Monthly Allowance on labor force participation. On the other hand, there may be an upward bias (away from zero) on the social pension coefficient. The decision for elderly to retire depends on individual productivity, marginal disutility of labor, and occupational aspects (Filer and Honig, 2005). Thus, early adoption into the pension program and the decision to retire could be endogenously determined (Coile and Gruber, 2000; Friedberg and Webb, 2005; Lopezlira, 2012).

As a robustness check, we use propensity score matching (nearest neighbor) to address concerns about selection bias and endogeneity, common issues in the estimation of the effect of pensions on elderly labor force participation. The resulting estimates are the average treatment effects on the treated, where the treated group is older persons who receive the social pension. Note that Bangkok is necessarily dropped from the sample since the pension program was introduced to Bangkok in 2009, meaning that there is no “comparison group” in 2007.

Results

The labor markets are dramatically different in urban Bangkok, with its relatively large formal sector, and areas outside of Bangkok, with its largely informal economy based on agricultural. Thus, the analysis is stratified by five major regions: Bangkok, Central, North, Northeast and South. The probit regression results are reported in table 3.

Consistent with other studies, age, education, marital status, and status as head of household are correlated with the labor force participation decision. Household size and per capita earnings are negatively related to labor force participation, which is consistent with the idea that if there are more people and income to support elderly individuals, it is less likely the elderly will be economically active. Living in a household primarily engaged in agriculture also increases the likelihood that an older person will be economically active.

Table 3. Social Pension Impact on Older Persons' Labor Force Participation by Region
Probit Regression Results

VARIABLES	All Regions					
	Bangkok	Outside Bangkok	Central	North	Northeast	South
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Labor Force Participation						
Social pension indicator	-0.03 (0.026)	-0.01 (0.007)	-0.02* (0.013)	0.01 (0.014)	-0.02* (0.013)	0.00 (0.021)
<i>Individual characteristics</i>						
Years of education	-0.02*** (0.003)	-0.02*** (0.001)	-0.02*** (0.002)	-0.03*** (0.002)	-0.03*** (0.002)	-0.02*** (0.003)
Female indicator	-0.02 (0.040)	-0.11*** (0.012)	-0.05** (0.021)	-0.12*** (0.022)	-0.16*** (0.021)	-0.09*** (0.034)
Married indicator	0.15*** (0.034)	0.20*** (0.011)	0.19*** (0.019)	0.17*** (0.021)	0.24*** (0.020)	0.19*** (0.033)
Female*married	-0.16*** (0.036)	-0.03** (0.014)	-0.08*** (0.025)	-0.02 (0.028)	0.02 (0.028)	-0.06 (0.043)
Household head indicator	0.04** (0.022)	0.12*** (0.007)	0.11*** (0.012)	0.13*** (0.015)	0.12*** (0.015)	0.13*** (0.022)
<i>Household characteristics</i>						
Urban indicator		-0.01 (0.006)	-0.01 (0.011)	0.01 (0.012)	-0.01 (0.011)	-0.06*** (0.017)
Household size	-0.02*** (0.006)	-0.02*** (0.002)	-0.03*** (0.003)	-0.03*** (0.004)	-0.02*** (0.003)	-0.03*** (0.005)
Real income per earner (baht '000)	-0.00 (0.001)	-0.00*** (0.000)	-0.00*** (0.000)	0.00 (0.001)	-0.00 (0.001)	-0.00* (0.001)
Agricultural household indicator	0.14 (0.141)	0.24*** (0.008)	0.33*** (0.015)	0.20*** (0.015)	0.19*** (0.013)	0.20*** (0.020)
<i>Other pensions and insurance</i>						
Government welfare indicator	-0.22*** (0.023)	-0.14*** (0.019)	-0.16*** (0.026)	-0.19*** (0.049)	-0.03 (0.047)	-0.16*** (0.046)
Universal health (UCS) indicator	-0.17*** (0.030)	-0.02 (0.019)	-0.04 (0.028)	-0.05 (0.052)	0.10** (0.046)	-0.13*** (0.044)
Private health indicator	0.12** (0.060)	0.09*** (0.026)	0.08** (0.037)	0.21*** (0.054)	-0.04 (0.067)	0.22*** (0.061)
Disability pension indicator		-0.33*** (0.017)	-0.31*** (0.031)	-0.32*** (0.031)	-0.35*** (0.029)	-0.41*** (0.065)
Age Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,925	36,659	10,972	9,795	11,461	4,431

Standard errors in parentheses; coefficients reported as marginal effects

*** p<0.01, ** p<0.05, * p<0.1

On average, the social pension has no impact on the labor participation decisions of older persons in Bangkok, the North, and the South. There is, however, a small impact on labor force participation decisions for older workers in the Central and Northeastern regions. In both these regions participation in the social pension decreases the probability of participating in the labor force by around 2 percent.

As stated earlier, for the majority of older persons the magnitude of the monthly allowance is rather small (on average 7-8 percent of per capita household income). However, for the elderly living in low-income households, the allowance represents about 20-24 percent of the mean per capita household income. The allowance constitutes a large share of income, thus, for this group it is plausible that the cash benefit would have a larger impact on labor supply decisions. Table 4 reports results for the analysis on the labor participation decisions for elderly from low-income households.

The social pension has no effect on the labor supply decisions of low-income older persons in Bangkok. However, the social pension has a relatively large impact on the labor force participation decisions for the elderly living outside Bangkok. On average, an older person living outside Bangkok who participates in the social pension scheme is 6 percent less likely to be economically active than those who do not participate in the scheme. If one looks at the results by region, elderly covered by the scheme living in the Central, North, and South regions are 7-8 percent less likely to be in the labor force than those who do not participate in the social pension. The one exception is northern Thailand, although it is not immediately clear why this is the case.

The probit regressions do not correct for bias stemming from selection and endogeneity issues. In order to address concerns regarding self-selection and endogeneity, we use propensity score matching as a robustness check. Table 5 compares the average treatment effect on the treated to the marginal effects from the probit regressions reported above for both the entire sample and the low income sample. Bangkok is excluded from the analysis since there is no appropriate comparison group in the 2007 data.²

Table 5 shows that the average treatment effects on the treated are similar in magnitude to the probit regression marginal effects that do not correct for endogeneity and selection bias. However, the statistical significance is attenuated in most cases. In general, the propensity score matching results corroborate the previous finding that the social pension has little or no impact on labor force participation decisions of older workers as a whole. However, the impact of the social pension on labor force participation of low-income elderly living outside of Bangkok is negative and statistically significant. The ATT suggests that elderly who live outside of Bangkok and receive the social pension are 7 percent less likely to be economically active than those who do not receive the social pension. This result is statistically significant at the 1 percent level and the magnitude is similar to the probit marginal effect of negative 6 percent. The results of the propensity score matching for the four regions outside of Bangkok are similar in magnitude to the probit marginal effects as well, although only the estimate for the Northeast region is statistically significant at conventional levels. Overall, the propensity score matching results corroborate the probit results and suggests that the selection bias

² The targeted monthly allowance program in place prior to the universal program implementation in 2009 did not cover Bangkok. As there are no program participants in Bangkok in 2007, an appropriate comparison group could not be constructed for the propensity score matching.

**Table 4. Social Pension Impact on Low-income Older Persons' Labor Force Participation by Region
Probit Regression Results**

VARIABLES	All Regions					
	Bangkok (1)	Bangkok Outside (2)	Central (3)	North (4)	Northeast (5)	South (6)
	Dependent Variable: Labor Force Participation					
Social pension indicator	-0.01 (0.046)	-0.06*** (0.011)	-0.07*** (0.021)	-0.02 (0.022)	-0.08*** (0.021)	-0.08** (0.032)
<i>Individual characteristics</i>						
Years of education	-0.02*** (0.005)	-0.01*** (0.003)	-0.01 (0.005)	-0.01 (0.006)	-0.01 (0.007)	-0.01 (0.008)
Female indicator	-0.04 (0.064)	-0.11*** (0.019)	-0.02 (0.035)	-0.14*** (0.035)	-0.20*** (0.034)	-0.08 (0.054)
Married indicator	0.16*** (0.052)	0.20*** (0.017)	0.21*** (0.032)	0.16*** (0.032)	0.24*** (0.032)	0.20*** (0.050)
Female*married	-0.16*** (0.056)	-0.04 (0.023)	-0.13*** (0.040)	-0.01 (0.045)	0.03 (0.045)	-0.07 (0.067)
Household head indicator	0.04 (0.036)	0.11*** (0.012)	0.10*** (0.019)	0.13*** (0.024)	0.09*** (0.024)	0.13*** (0.033)
<i>Household characteristics</i>						
Urban indicator		-0.01 (0.009)	-0.04*** (0.016)	0.01 (0.017)	0.00 (0.017)	-0.04* (0.026)
Household size	0.00 (0.008)	-0.02*** (0.003)	-0.01*** (0.005)	-0.04*** (0.006)	-0.02*** (0.005)	-0.01* (0.008)
Real income per earner (baht '000)	-0.01*** (0.002)	-0.00*** (0.001)	-0.01*** (0.002)	0.01*** (0.003)	-0.00 (0.003)	-0.02*** (0.004)
Agricultural household indicator	0.19 (0.180)	0.22*** (0.011)	0.32*** (0.022)	0.23*** (0.021)	0.15*** (0.018)	0.17*** (0.032)
<i>Other pensions and insurance</i>						
Government welfare indicator	-0.19*** (0.039)	-0.00 (0.040)	-0.03 (0.058)	0.07 (0.103)	0.04 (0.095)	-0.06 (0.092)
Universal health (UCS) indicator	-0.22*** (0.063)	0.07* (0.037)	0.06 (0.053)	0.14 (0.093)	0.17* (0.089)	-0.11 (0.083)
Private health indicator	0.04 (0.148)	-0.02 (0.092)	-0.03 (0.118)	0.06 (0.250)	0.03 (0.195)	
Disability pension indicator		-0.39*** (0.020)	-0.41*** (0.024)	-0.35*** (0.036)	-0.42*** (0.037)	-0.42*** (0.083)
Age Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	757	14,787	4,445	3,971	4,573	1,797

Standard errors in parentheses; coefficients reported as marginal effects

*** p<0.01, ** p<0.05, * p<0.1

and endogeneity issues are not of great concern in this case, possibly due to the universal nature of the scheme.

**Table 5. Impact of the Social Pension on Labor Force Participation
Comparison of Probit Marginal Effects and Average Treatment of the Treated (ATT) Estimates**

Region	Sample	Probit (Marginal Effects)	Propensity Score (ATT)
All regions outside Bangkok	All	-0.01 (0.007)	-0.01 (0.014)
	Low Income	-0.06*** (0.011)	-0.07*** (0.024)
Central	All	-0.02* (0.013)	0.01 (0.025)
	Low Income	-0.07*** (0.021)	-0.06 (0.040)
North	All	0.01 (0.014)	0.02 (0.033)
	Low Income	-0.02 (0.022)	-0.06 (0.044)
Northeast	All	-0.02* (0.013)	-0.02 (0.023)
	Low Income	-0.08*** (0.021)	-0.06* (0.035)
South	All	0.00 (0.021)	-0.05 (0.033)
	Low Income	-0.08** (0.032)	-0.08 (0.059)

Notes: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Conclusions

This paper investigated the impact of the implementation of the universal Monthly Allowance for Older Persons on the labor force participation of older workers in Thailand. The probit analysis confirms that there was little or no impact of the social pension on labor force participation of older persons in the full nationally representative sample, which is not surprising given that the cash benefit represents only 7-8 percent of mean per capita household income. However, the impact of the Monthly Allowance for Older Persons on the labor force participation rates of low-income elderly living outside Bangkok was sizeable. Low-income older workers outside Bangkok who participated in the social pension scheme were 6 percent less likely to be economically active. To address our concerns regarding biased estimates arising from self-selection and endogeneity, we further analyzed the impact of the social pension by applying a propensity score matching approach as a robustness check. The ATTs from the propensity score matching are similar in magnitude to the marginal effects found using the probit analysis, confirming that the universal pension reduced elderly labor force participation in low-income households outside Bangkok where the labor market is largely informal.

The sizeable impact of the Monthly Allowance for Older Persons despite the relatively small cash benefit amount suggests that the social pension does in fact assist elderly with low income status. If the Thai Government were to raise the monthly cash benefit amount, it is possible that the universal social pension has the potential to become a more substantial component of income, offering the elderly, especially in the informal sector, financial security in the face of disappearing family resources due to demographic change. In essence, the Monthly Allowance for Older Persons has the potential to allow Thailand's low-income elderly to retire while simultaneously improving their financial security, standard of living, and quality of life. While the results of this study suggest that the Monthly Allowance for Older Persons has the potential to improve the financial security for many of Thailand's elderly, the future sustainability of such a universal program must be considered in the face a large informal sector that operates outside of formal social security programs and Thailand's rapidly aging population that will increasingly place burdens on the social pension program.

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