
A close-up photograph of a person's hands holding an open book. The person is wearing a light-colored, textured sweater. The book has a light brown cover and white pages. The background is a soft, out-of-focus light gray.

# **Alternative** Boomerang Kids, Intergenerational Coresidence, and the Maternal Labor Supply

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# 1. Introduction

 The unprecedented increase in young adult children moving back in with their parents in some developed countries (Dettling & Hsu, 2018; Stone et al., 2012; Kaplan, 2012).

- “Boomerang kids” in Western countries, who are adult children who live independently but choose to return home and co-reside with their parents again.
- A protective method that hedges the adult children from labor market uncertainty

# 1. Introduction

 In Asian countries, coresidence manifests in a different way

- with different cultural backgrounds, living arrangements, and family concepts compared to Western countries
- not cohabit with their adult children in most developed countries
- a prevalent living pattern for a long time in Asia
- no studies focused on dynamic changes in the living arrangements in the Asian context

# 1. Introduction

## Why Thailand?

- The most distinctive case in East Asia when it comes to family patterns (Bian, 1998)
  - The matrilocal preference
  - Children are considered as elderly parents' insurance
  - The tendency for Thai couples to live with parents with more resources
- Recent cultural and demographic changes
  - like the low fertility rate, immigration, and urbanization have affected family structures

# 1. Introduction

## NESDB(2015)


- The nuclear family is still the major household type in Thailand, but the percentage has decreased from 63.1% to 44%
- The extended family type has increased from 35.2% to 51.6% over the past 30 years

## Knodel(2017)-SOPT

- nearly two thirds of older parents either co-reside with or live next to a child

# 1. Introduction

 A historically high and stable labor supply of married women (approximately 80%)

 With this stable labor force participation, coresidence plays a small role in the form of risk sharing for labor market uncertainty for adult children, as in Western countries

## 2. Objectives


- The first empirical study of boomerang kids in an Asian context
  - investigate the “boomerang phenomenon” of adult children in Thailand, who act differently to their counterparts in Western countries
  - examine whether the presence of such children will affect adults’ living arrangements using Socio-Economic Survey (SES) data from 2005–2012.
- To investigate the influence of coresidence on the maternal labor supply using the Labour Force Survey (LFS) from 1985–2016

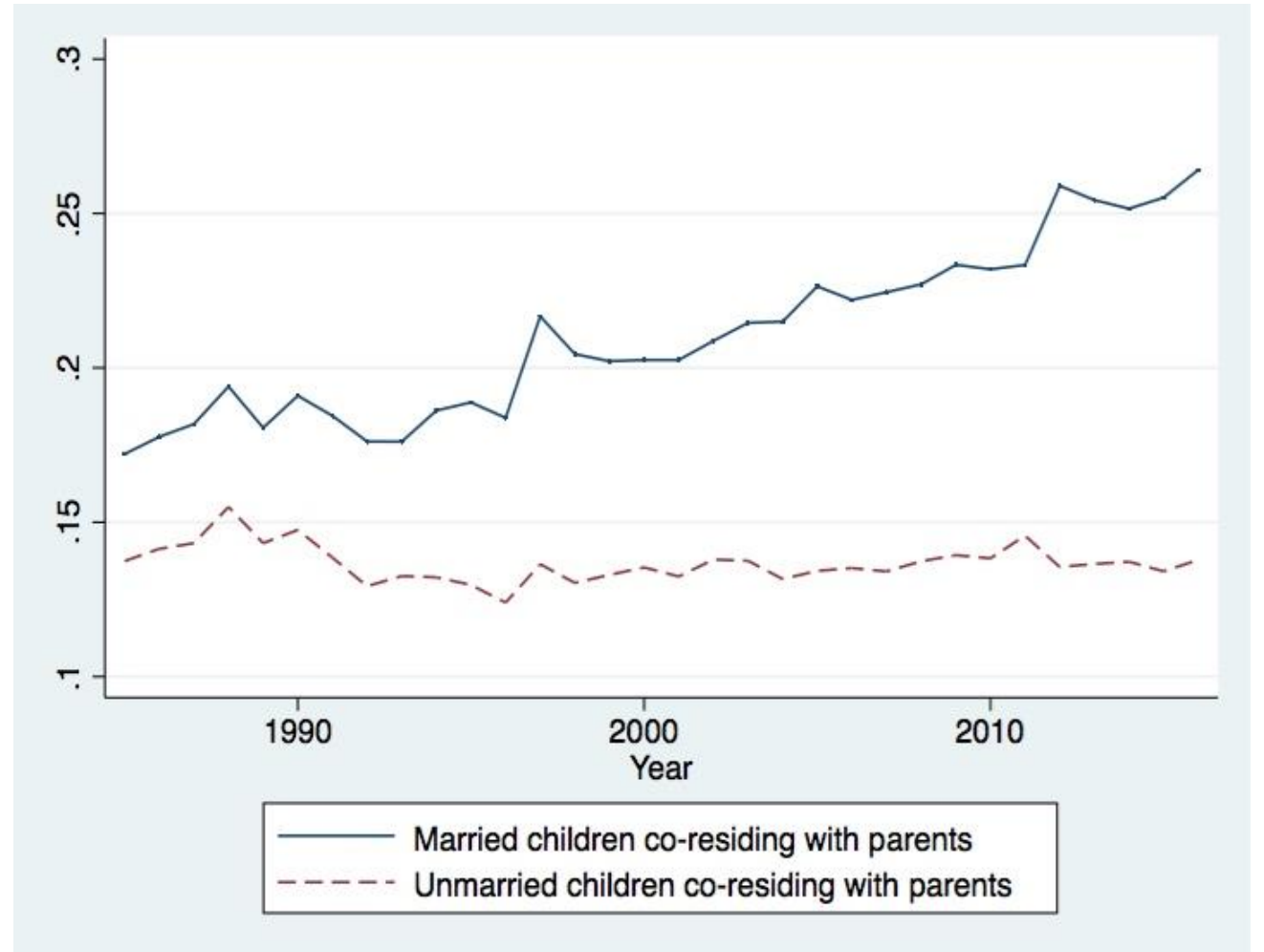
## 2. Objectives

 Our results show that


- Having young children increases the likelihood of adult children coresiding with their parents
- A positive relationship between coresidence and maternal labor force supply

# 3. Background

 The increasing trend of coresidence for married couples from 1985 to 2016 is shown in [Figure 1](#). Percentage of coresidence by number of households (married vs. unmarried), 1985-2016



# 3. Background

 To check the dynamic changes in the living arrangements of adult children, we tracked the number of coresiding households and the percentage of coresidence in a married sample and an unmarried sample of individuals aged 18–23 in 2005, throughout the time periods. (Table 1)

# 3. Background

**Table1. Intergenerational household for cohort (age 18-23) using SES panel data**

Year	Age	No. of intergenerational household		Percentage	
		Married	Unmarried	Married	Unmarried
2005	18-23	228	693	63.5%	74.0%
2006	19-24	274	608	62.3%	73.3%
2007	20-25	287	530	62.7%	70.5%
2010	23-28	377	396	57.7%	66.1%
2012	25-30	417	311	61.6%	63.7%

# 3. Background

## The first hypothesis

- The presence of children should increase the likelihood of coresidence
  - There exist “boomerang kids” in Thailand who move out from their parents’ home, then tend to move back in with their parents again after they get married and have children, mainly in order to save time and money on childcare.



# 3. Background

- To understand the household formation process, it is necessary to understand the uncertainties and opportunities for boomerang kids in the labor market (Kaplan 2009).
  - Negative relationship between fertility and the maternal labor supply
  - This effect is mitigated in intergenerational households because grandparents in these households free up time for mothers by providing childcare and doing household chores.

# 3. Background

## The second hypothesis


### Intergenerational coresidence should increase the labor supply of mothers

-  The work decisions by mothers are mainly affected by childcare arrangements
-  The positive impact of intergenerational co-residence on female labor supply has been found in different countries (Sasaki, 2002 in Japan; Compton & Pollak, 2014 in the US; Chun et al., 2009 in Korea; Shen et al., 2016 in China).

## 4. Literature Review



- Intergenerational coresidence leads to frequent reciprocal exchanges within households (Kolodinsky & Shirey, 2000; Liu & Dong, 2010; Chen et al., 2011; Shen et al., 2016)
- Isengard and Szydlik (2012) explain that there are two main reasons for coresidence: financial aspects and emotional aspects.
  - the residents of a household can pool profits and share resources; generations in a household can also enjoy close and frequent contact

## 4. Literature Review



 Studies in Western countries have examined the determinants of boomerang kids. Generally, adult children's unemployment raises the likelihood of co-residing with parents.

- McElroy (1985) suggests that there is an ordered relationship between wage, employment, and household formation. Besides, coresidence acts as a form of non-employment insurance for adult children.
- Ermisch (1999) finds using data from the British Household Panel Survey that unemployment increases the probability of moving back home.
- Kaplan (2012) also suggests that movement back home by young adults in the US is affected by labor market shocks.


## 4. Literature Review

-  Engelhardt et al. (2016) finds that parents use their living arrangements as a form of risk sharing to protect their adult children from labor market uncertainty, where moving from full-time employment to part-time employment or unemployment raises the likelihood of coresidence.
-  Dettling and Hsu (2018) estimated a series of OLS regressions and found that indebtedness increases the likelihood of parental coresidence for young adults.

## 4. Literature Review



-  The term “boomerang kids” has been solely applied to Western cultures in the literature, starting from the time of the economic downturn in the 2000s.
-  Instead of being a form of protection from labor market uncertainty, coresidence mainly acts as a childcare cost and time saving method for mothers. In Thailand, the proportion of married couples living with their parents has increased by nearly 10% over time (Figure 1).

## 4. Literature Review

 Most of the previous studies found a significantly positive impact of coresidence with parents on the maternal labor supply.

- Nakamura and Ueda (1999): new mothers co-reside with their parents are 30 percentage more likely to participate in the labor market.
- Del Boca (2002): a positive relationship of having an alive grandparents and labor market participation of Italian women.
- García-Morán and Kuehn (2016): as regular providers of free childcare, women in Germany, living close to their parents are more likely to hold a regular job.



## 4. Literature Review

-  The endogeneity of coresidence arises from the unobserved preferences, correlating with both living arrangement and labor supply, like family values, filial piety, career ambitions of women, or the care needs of parents.
-  To solve the problem, [applying instrumental variable](#) is the most used approach in the literatures.

# 5. Data and Variables

 Two data sets were used in this paper:

 First Hypothesis: Boomerang kids—SES panel data

-  Thai Socio-Economic Survey panel, conducted by the National Statistical Office of Thailand in 2005, 2006, 2007, 2010, and 2012 to analyze the living arrangements of married couples.
-  Over 15,000 individuals and 6,000 households were randomly sampled all over the country, and household and individual information was obtained.

## 5. Data and Variables

Table3 Summary Statistics for SES panel data			
		Men	Women
Labor force participation rate		0.923	0.819
		(0.267)	(0.385)
Parents' health status		2.706	2.726
		(0.776)	(0.774)
Age		35.140	35.440
		(9.101)	(9.073)
Education:			
Primary level		0.432	0.456
		(0.495)	(0.498)
Secondary level		0.396	0.305
		(0.489)	(0.460)
University level		0.172	0.239
		(0.377)	(0.427)
Observations		18,859	21,408

Notes: Standard deviation in parentheses.

# 5. Data and Variables

## Second hypothesis: Maternal Labor Supply—LFS cross-sectional data

- The annual LFS from Thailand from 1985 to 2016, which is collected by the National Statistical Office of Thailand.
- Used the third quarter of the year
- Married women aged 25 to 50
- Two major types of intergenerational household structure for married couples
  - (1) head of household, spouse, married son or daughter, and son or daughter in law; (2) head of household, spouse, and parents.

## 5. Data and Variables

- Disaggregated children into three age groups with different time and income needs: preschoolers aged 0 to 5, young schoolers aged 6 to 13, and old schoolers aged 14 to 18.
- A full set of control variables in all regressions: age, age squared, spouse's age, spousal education, and three children group dummies, regional labor force nonparticipation rate of women.

## 5. Data and Variables

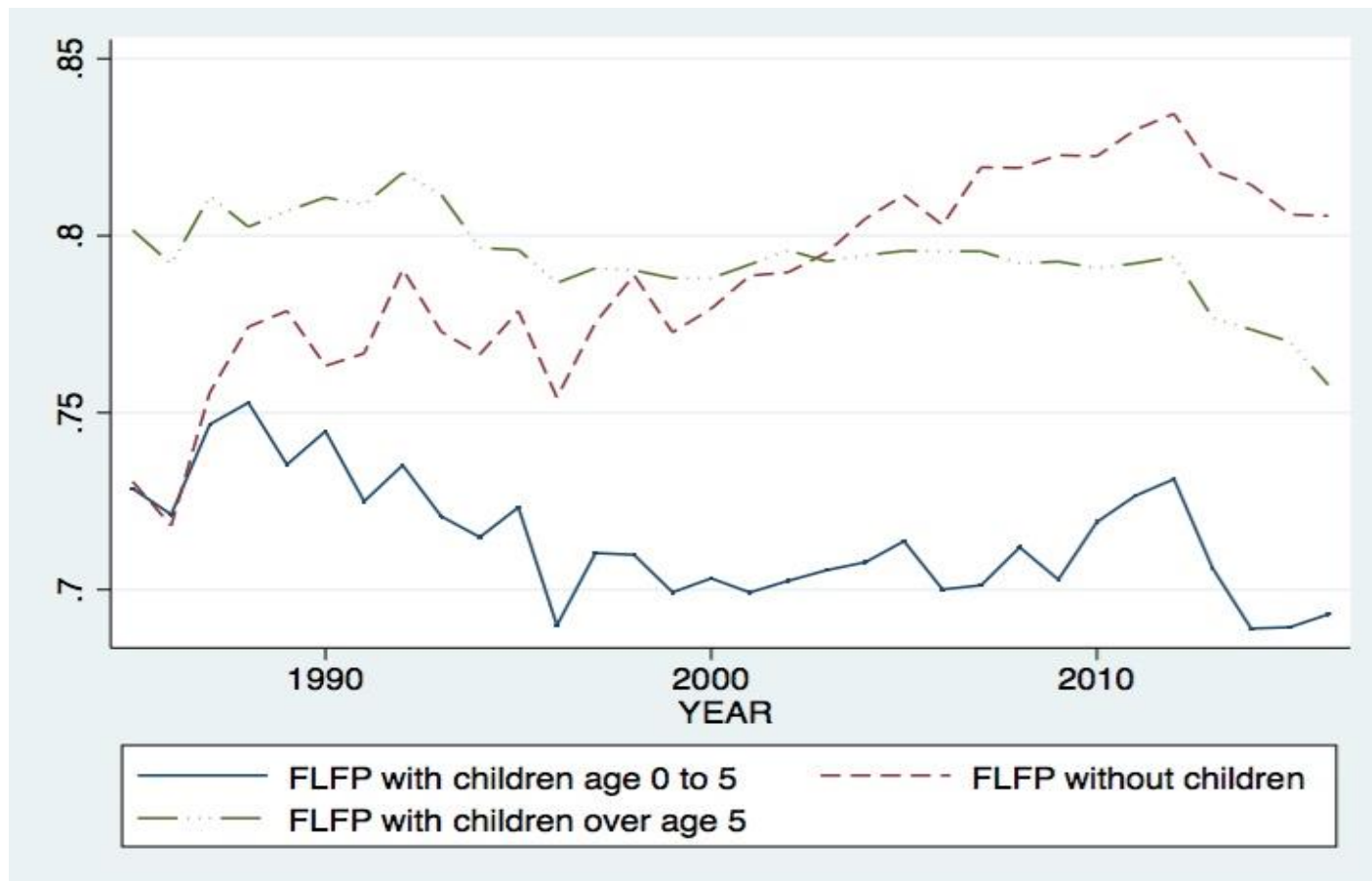
**Table4 Summary Statistics for Married Women Sample**

	(1)	(2)	(3)
	All (n=229,869)	Coresidence	
		Yes (n=126,875)	No (n=102,994)
Labor force participation rate	0.816	0.824	0.806
	(0.387)	(0.380)	(0.396)
Working hours	47.394	47.041	47.895
	(14.233)	(13.807)	(14.801)
Children age 0-5	0.565	0.600	0.516
	(0.496)	(0.490)	(0.500)
Children age 6-13	0.572	0.587	0.552
	(0.495)	(0.492)	(0.497)
Children age 14-18	0.341	0.300	0.398
	(0.474)	(0.458)	(0.490)
Age	36.632	33.495	40.495
	(7.687)	(6.374)	(7.401)
Education:			
Primary level	0.553	0.465	0.660
	(0.497)	(0.499)	(0.474)
Secondary level	0.309	0.372	0.232
	(0.462)	(0.483)	(0.422)
University level	0.127	0.150	0.098
	(0.332)	(0.357)	(0.298)

Notes: Standard deviation in parentheses.

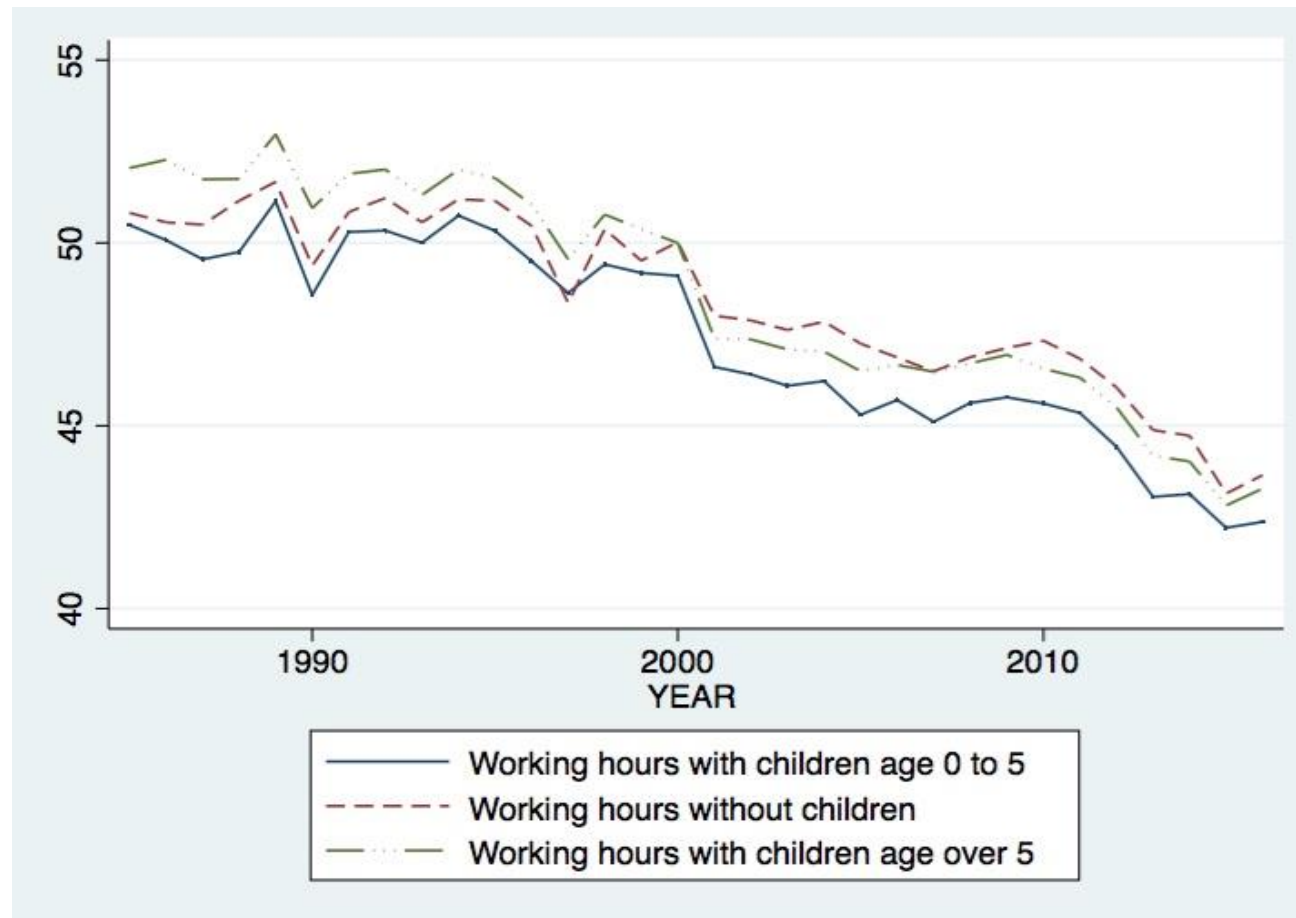
# 5. Data and Variables

Figure 2. Labor force participation rate of married women in three groups, 1985-2016



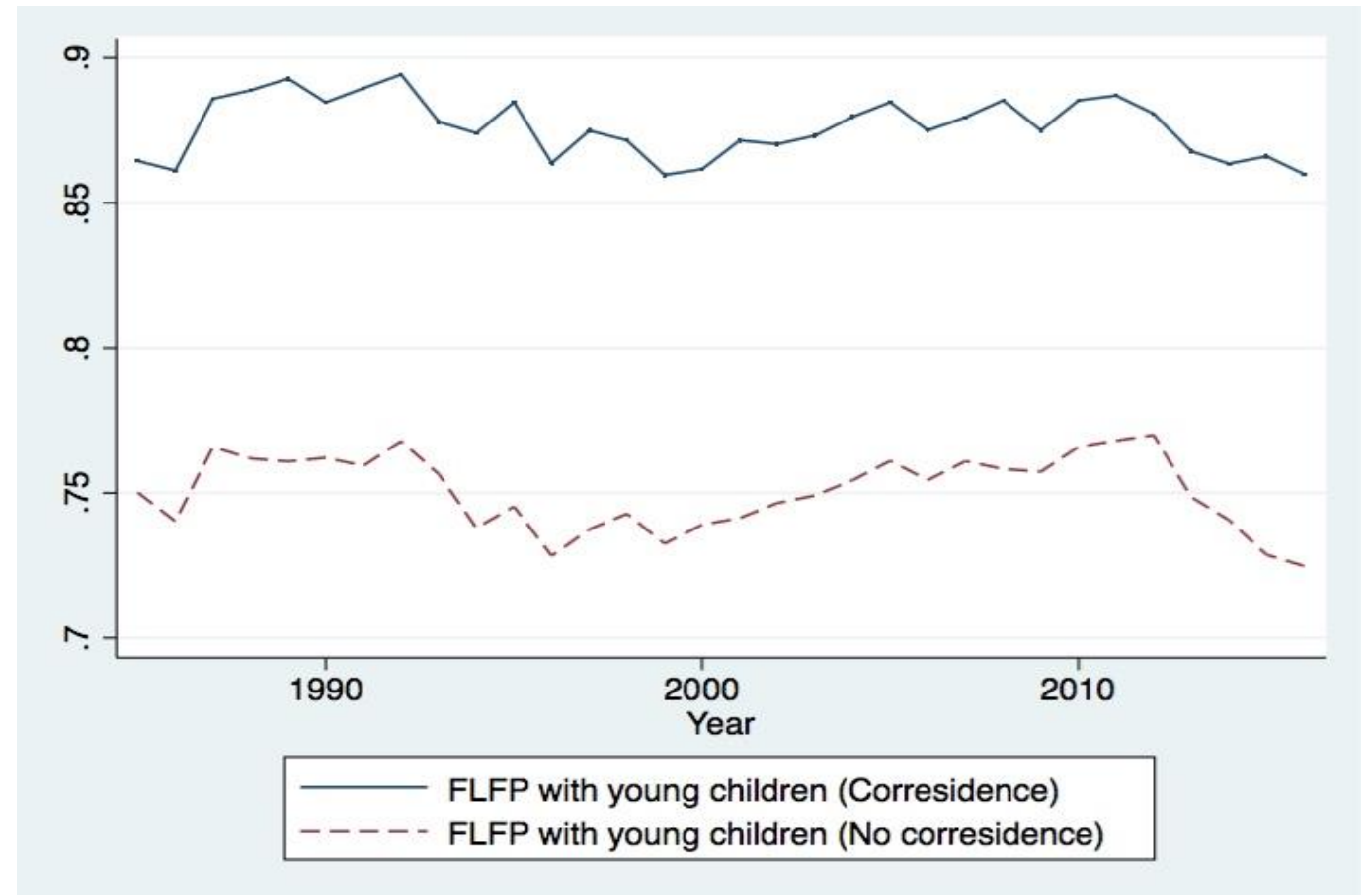
# 5. Data and Variables

Figure 3. Average weekly working hours of married women in three groups, 1985-2016




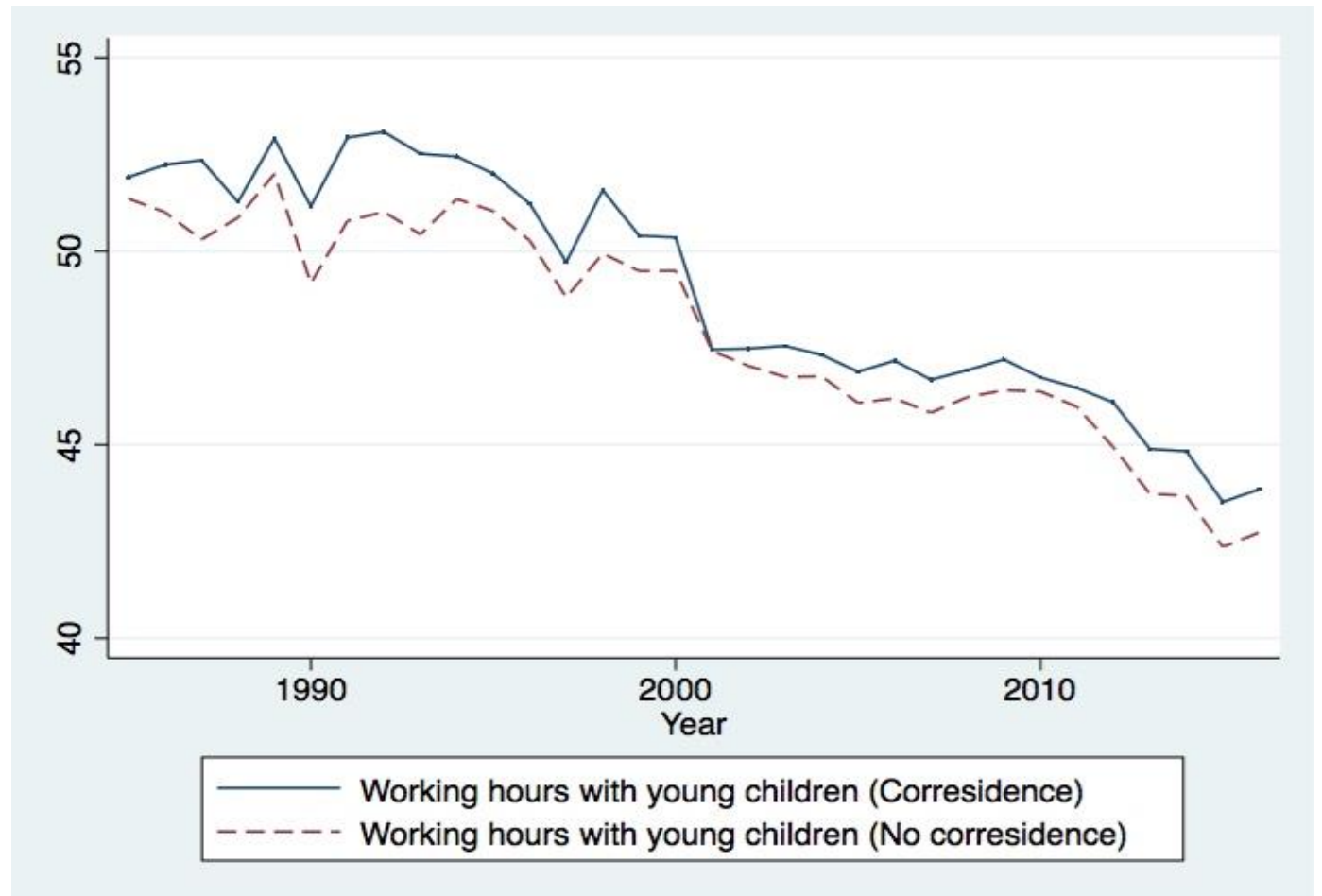
# 5. Data and Variables

Figure 4. Labor force participation rate of married women with young children in multi-generational household and nuclear household, 1985-2016



# 5. Data and Variables

 Figure 5. Average weekly working hours of married women with young children in multi-generational household and nuclear household, 1985-2016



# 6. Methodology


## 1<sup>st</sup>-Boomerang Kids

- Probit regression on the probability of living with parents as well as a fixed effect model to correct for the unobserved heterogeneity
- The probability that an adult child chooses to live with their parents is as follows:

$$Pr(y=1|z,x)=G(z\beta+x\gamma)$$

where  $y$  is the observed living arrangement, which is equal to 1 if an adult child chooses to live with their parents, and 0 otherwise;  $z$  is a dummy for having a child aged 0 to 5 in the household, and  $x$  is a set of control variables including 3 levels of educational dummies, marital status, gender, parental health, age, and regional dummies.

## 6. Methodology

-  To address the notion that residence choice may be correlated with an individual's unobserved characteristics, which may also affect their decision to have children, we also ran fixed effect regressions.

$$y_{it} = \alpha_i + z_{it}\beta + x_{it}\gamma + \varepsilon_{it}$$

where  $y_{it}$  is an indicator that equals 1 if an adult child lives with their parents at period  $t$  and 0 otherwise.  $\alpha_i$  is the individual specific effects, the unobserved heterogeneity in children's taste for coresidence.  $\beta$  represents the impact on coresidence of having young children in the household.

# 6. Methodology

## 2<sup>nd</sup> - Maternal labor supply

- We apply Probit model for labor force participation.

where  $Y_i$  indicates the labor supply of married women. If  $Y_i$  is the binary outcome of labor force participation, the linear probit model is applied; If  $Y_i$  is the working hours, the Tobit model and Heckman selection model are applied, as we only observe the values only when the individual is employed, otherwise the working hours is zero or missing.

- $C_i$  is the dummy variable; if women co-reside with parents in the same household, it is equal to 1; if not, 0.

$X_i$  is a vector of control variables [including age, education level, regional feminine nonparticipation rate, spouse age, spouse education level, children dummies]

## 6. Methodology



We apply the two-stage-least-square (2SLS) estimation

- The first stage, the endogenous variable is treated as a linear function of three sets of instruments and control variables, obtaining the predicted value  $C_i$
- The second stage, using the predicted value, to obtain the IV estimates.

$$C_i = \gamma_0 + \gamma_1 Z_1 + \gamma_2 Z_2 + \gamma_3 Z_3 + \gamma_4 X_i + v_i$$

$$Y_i = \alpha_0 + \alpha_1 \hat{C}_i + \alpha_2 X_i + \eta_i$$




where  $Z$  is the instrumental variables, which are highly correlated with coresidence variable,  $C_i$ .


$Y_i$  is the labor supply of married women

$\alpha_1$  indicates the effect of coresidence on women's labor supply .

## 6. Methodology

### Instrumental Variables:


-  Percentage of households which have co-resident parents over age 70 in the region
-  A set of wives' age and husbands' age interactions
-  A set of regional dummies as instruments for coresidence


 *The valid instruments should have strong predictive power of coresidence, but should not directly affect the labor supply.*

## 6. Methodology


- More than half of elderly live with at least one married child and for those over 70, the percentage is higher than the those in their 60s (Survey of Older Persons in Thailand 2011)
- To capture the difference of the labor force participation rates in different regions
  - Calculating the regional average rate of female who does not participate in the labor force by aggregating the labor force participation information for all feminine regional residents (Albuquerque and Passos 2010, Maurer-Fazio et al. 2011).

## 6. Methodology

 We separately estimate the model under different age categories, accompanying with the birth cohorts, to mitigate the age effect on labor supply




 *The results are generally consistent with our main results in the following section*

 The percentage of household types varies across the regions.

 The difference between regional intergenerational coresidence ratios is the largest comparing with other types of household, which shows over 10% gap between the North East region and South, Central and Bangkok region (UNFPA 2015).

# 7. Result

## Boomerang Kids

-  A positive impact of having young children on coresidence
-  Upward bias of the unobserved characteristics
-  Having young children increases the likelihood of adult children coresiding with their parents by approximately 32–34% under the fixed effect model

**Table5. The impact of presence of young age children on coresidence decision**

	(1) Men&women		(2) Women		(3) Married women	
	Logit	FE	Logit	FE	Logit	FE
Having children age 0 to 5	0.488***	0.343***	0.480***	0.318***	0.335***	0.337**
	(0.029)	(0.088)	(0.039)	(0.117)	(0.042)	(0.132)
Age	0.001	0.621***	0.00792***	0.625***	0.003	0.680***
	(0.002)	(0.014)	(0.002)	(0.019)	(0.003)	(0.022)
Parent health status	0.962***	0.875***	0.938***	0.830***	0.935***	0.842***
	(0.018)	(0.048)	(0.025)	(0.062)	(0.027)	(0.070)
Marital status	0.476***	0.115	0.455***	0.252		
	(0.040)	(0.169)	(0.050)	(0.212)		
Control for education and residence area	Yes	Yes	Yes	Yes	Yes	Yes
Control for spouse's income and education	No	No	No	No	Yes	Yes
Observation	29,899	12,951	16,533	7,380	14,289	6,468
Robust standard errors in parentheses						

# Impact of coresidence on women's labor force participation

	Probit Model	Probit Model (parent age>70)	IV Model	IV Model (parent age>70)
<b>Explanatory variables:</b>				
Coresident with parents	0.0399*** (0.007)	0.0386*** (0.012)	0.210*** (0.014)	0.230*** (0.028)

- Hexagon The IV estimate of coresidence coefficient is much larger than probit model
  - A downward bias caused by the unobserved preferences, like family values
- Hexagon IV model suggests that women living with parents are 21% more likely to participate in the labor market than those who do not live with parents, while Probit model is just 4%
- Hexagon For the sample that parents older than 70, the coefficient is similar to basic estimation.





# Impact of coresidence on women's working hours

	OLS	IV (Heckman)	IV (parent age>70)
<b>Explanatory variables:</b>			
Coresident with parents	-1.275***	10.22***	6.727***
	(0.074)	(0.515)	(0.678)

- OLS results suggest a negative effect of coresidence on the working hours, where the coresidence is assumed to be exogeneous.
- IV results is positive, indicating women living with parents work 10.22 hours more per week on average, after correcting for the endogeneity problems.
- The presence of older parents, age over 70 in the household, increases the working hours of women by 6.7, which is less than the basic specification.




## Impact of coresidence on women's labor supply by residence area

	Work or not (IV)		Weekly working hours (IV)	
	Urban	Rural	Urban	Rural
<b>Explanatory variables:</b>				
Coresident with parents	0.204***	0.234***	1.618***	-6.657***
	(0.037)	(0.016)	(0.462)	(0.557)

-  Labor force participation - Both urban and rural show positive effect of coresidence on the female participation.
  -  The impact is larger for rural area comparing with urban area, 23.4% to 20.4%.
-  Working hours - The results for urban and rural area are distinct from each other.
-  The impact of coresidence is positive in urban area, while it is negative in rural area.

# Impact of coresidence on women's labor supply by education attainments

	Work or not (IV)			Weekly working hours (IV)		
	Primary level	Secondary level	University level	Primary level	Secondary level	University level
<b>Explanatory variables:</b>						
Coresident with parents	0.284***	0.0950***	0.0124	8.469***	9.927***	5.623***

-  Extensive margin - If they co-reside with parents, the labor supply of women with primary level education will increase by 28.4%, while those with secondary level education is 9.5%, & those with highest education are not affected much by coresidence.
-  Similarly, for the intensive margin - Women with primary education will increase 8.4 hours per week if they live with parents.
  -  The hours decrease along with the increase of the education attainment.

## 8. Conclusion

### Recommendations for government policies

- Aside from childcare policies, to encourage intergenerational households can increase the labor supply of married women.
- In Singapore, the Housing and Development Board provides the Proximity Housing Grant to people who live with or near their parents.