III

International Seminar

Population Aging in Eastern Asian Low Fertility Countries

報告資料

国際セミナー「東アジア低出産力国における人口高齢化の展望と対策に関する国際比較研究」
International Seminar: Population Aging in Eastern Asian Low Fertility Countries

厚生労働科学研究費補助金･地球規模保健課題推進研究事業「東アジア低出産力国における人口高齢 化の展望と対策に関する国際比較研究」では、2015 年 2 月 19～20 日に以下の通り国際セミナーを開催 した。

2015 年 2 月 19 日(木)　10:00～12:00　国立社会保障･人口問題研究所　第 4 会議室
2015 年 2 月 20 日(金)　13:30～15:30 京都大学総合研究 2 号館 4 階　第 2 会議室

科学研究費補助金により、韓国ソウル国立大学校社会科学大学の朴京淑（Park Keong-Suk）教授と、台湾中央研究院人文社会科学研究中心の于若蓉（YU Ruoh-Rong）博士が招聘され、韓国と台湾に関する報告を行った。研究プロジェクトのメンバーからは、鈴木透（国立社会保障･人口問題研究所）が導入部報告と進行をつとめ、馬欣欣（京都大学）が中国に関する報告を行った。国立社会保障･人口問題 研究所では相馬直子（横浜国立大学）が、京都大学では小島宏（早稲田大学）が、それぞれコメンテータをつとめた。いずれの会場も 20 名以上の参加があり、有意義で活発な議論が交わされた。

（共通プログラム）

1. SUZUKI Toru (IPSS)
Introduction: Low Fertility and Population Aging in Eastern Asia

2. PARK Keong-Suk (Seoul National University)
New Mechanism of Elder Poverty and Inequality in South Korea:
Family Change and Stratified Labor-Welfare System

3. YU Ruoh-Rong (Academia Sinica)
Familial Support and Living Arrangement of the Elderly People in Taiwan

4. MA Xin-Xin (Kyoto University)
Population Aging and Public Health Insurance Reform in Rural China

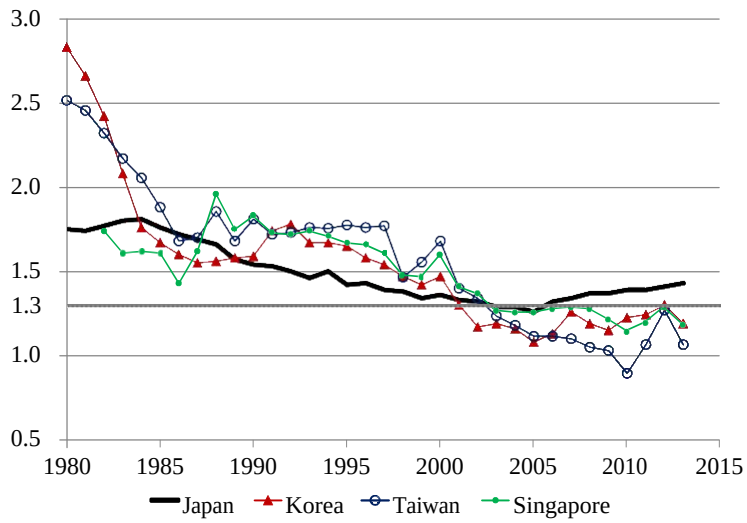
Introduction

Low Fertility and Population Aging in Eastern Asia

National Institute of Population and Social Security Research

Toru SUZUKI

Total Fertility Rate



Recorded Lowest TFR

France 1.66 (1994)
United Kingdom 1.63 (2001)

Sweden 1.50 (1999)
Netherlands 1.47 (1983)
Denmark 1.38 (1983)
Switzerland 1.38 (2001)
Austria 1.33 (2001)
Portugal 1.32 (2007)

Germany 1.24 (1994)
Greece 1.24 (1999)

Italy 1.19 (1995)
Spain 1.16 (1998)

1.5

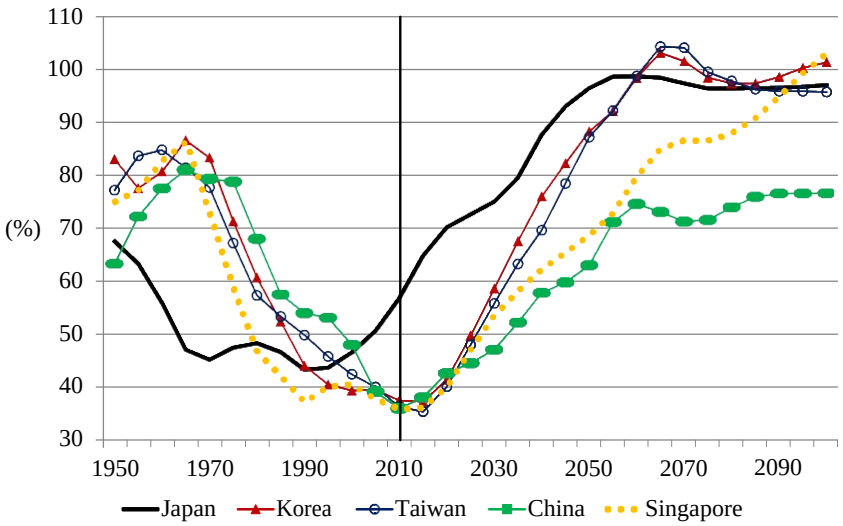
1.3

Japan 1.26 (2005)
Hungary 1.24 (2011)
Poland 1.22 (2003)
Slovak Republic 1.19 (1999)
Czech Republic 1.13 (1999)
Korea 1.08 (2005)

1.0

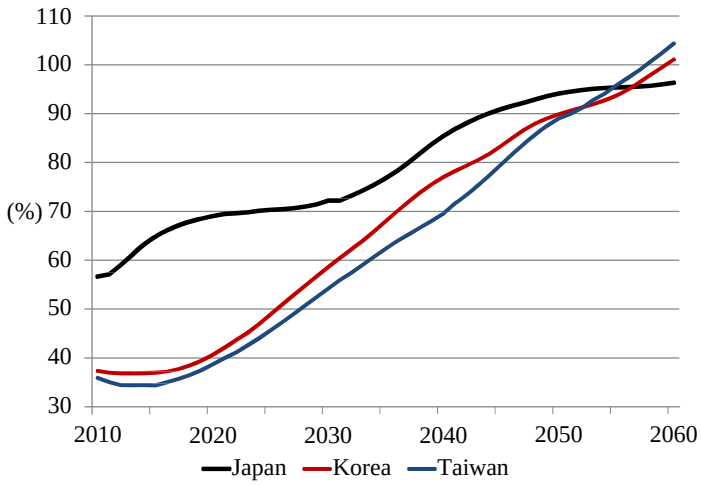
Taiwan 0.895 (2010)

Total Dependency Ratio



United Nations Population Division, World Population Prospects 2012 Revision

Total Dependency Ratio

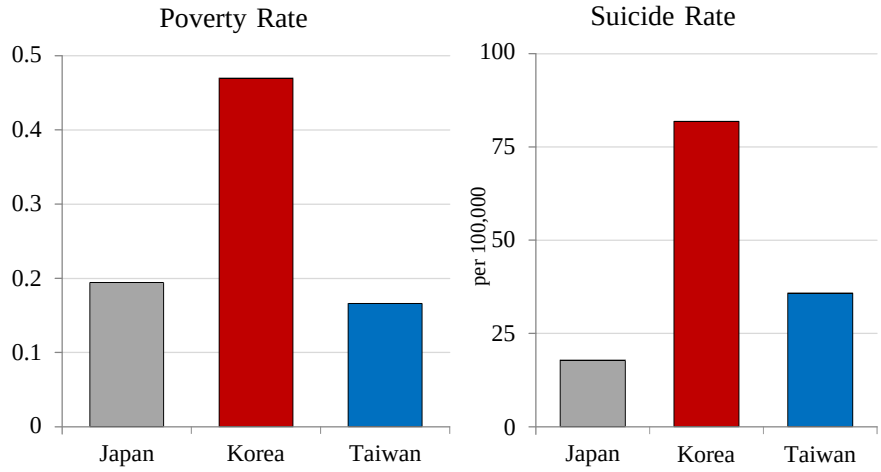


国立社会保障・人口問題研究所『日本の将来推計人口』2012.1
통계청『장래인구추계 : 2010년 ~ 2060년』2011.12
行政院經濟建設委員會『2010 年至2060 年 臺灣人口推計』2010.9

Pension Programs in Eastern Asia

Country	Pension Programs	Universal Pension
Japan	**恩給→公務員共済年金**（1923～） **労働者年金→厚生年金保険**（1942） **国民年金**（1961）	1961
Korea	**公務員年金**（1960） **軍人年金**（1963） **私立學校教職員年金**（1975） **國民年金**（1988）	1999
Taiwan	**軍人保險**（1950） **勞工保險**（1950） **公教人員保險**（1958） **農民健康保險**（1985） **國民年金保險**（2008）	2008
China	机关事业单位养老保险（1951～） 城镇企业职工基本养老保险（1997） 新型农村社会养老保险（2009） 城镇居民社会养老保险（2011）	2011

Situation of Elderly Aged 65+



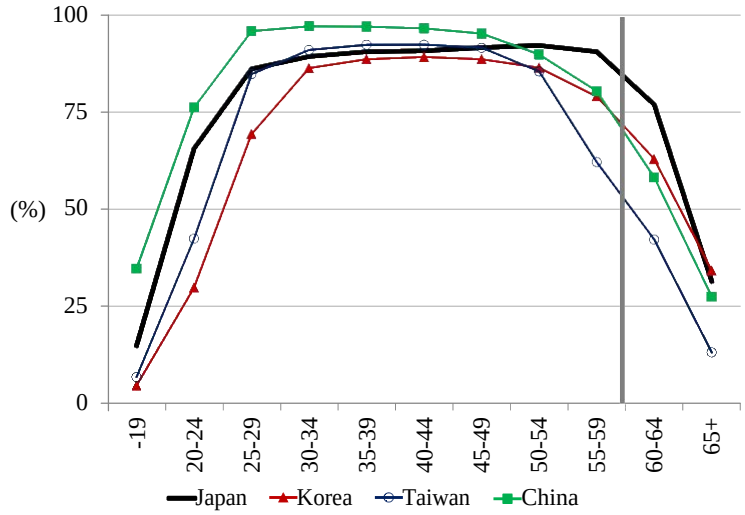
大西裕『先進国・韓国の憂鬱』中公新書，2014; 薛承泰「台灣近年來人口高齡化與家庭變遷」第19屆台灣-韓國-日本非政府社會福利組織研討會，2014.11.25-27，東京;**【社説】韓国の高齢者自殺率、日米の４～５倍とは，中央日報 2012-09-11，台灣老人好苦悶　自殺死亡率高居全國第一（立法院 2012-04-02）**

Living Arrangements of the Elderly Aged 65+ (%)

	Japan	Korea	Taiwan	China
Living Alone	16.4	19.7	14.3	12.1
Couple Only	33.7		19.6	11.4
Living with Child	40.7	77.7	52.2	
Other Private Households	3.5		11.3	76.5
Institution	5.7	2.6	2.6	

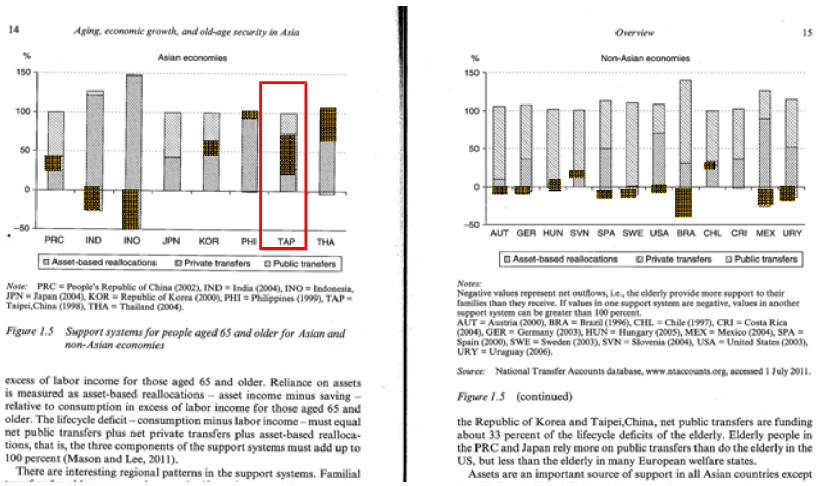
2010 census of each country

Male Labor Force Participation



2010 census of each country

Role of Familial Support for Elderly's Life (National Transfer Account)



14 *Aging, economic growth, and old-age security in Asia*

Asian economies

Note: PRC = People's Republic of China (2002), IND = India (2004), INO = Indonesia, JPN = Japan (2004), KOR = Republic of Korea (2000), PHI = Philippines (1999), TAP = Taipei,China (1998), THA = Thailand (2004).

Figure 1.5 Support systems for people aged 65 and older for Asian and non-Asian economies

excess of labor income for those aged 65 and older. Reliance on assets is measured as asset-based reallocations – asset income minus saving – relative to consumption in excess of labor income for those aged 65 and older. The lifecycle deficit – consumption minus labor income – must equal net public transfers plus net private transfers plus asset-based reallocations, that is, the three components of the support systems must add up to 100 percent (Mason and Lee, 2011).

There are interesting regional patterns in the support systems. Familial

Overview 15

Non-Asian economies

Notes:
Negative values represent net outflows, i.e., the elderly provide more support to their families than they receive. If values in one support system are negative, values in another support system can be greater than 100 percent.
AUT = Austria (2000), BRA = Brazil (1996), CHL = Chile (1997), CRI = Costa Rica (2004), GER = Germany (2003), HUN = Hungary (2005), MEX = Mexico (2004), SPA = Spain (2000), SWE = Sweden (2003), SVN = Slovenia (2004), USA = United States (2003), URY = Uruguay (2006).

Source: National Transfer Accounts database, www.ntaccounts.org, accessed 1 July 2011.

Figure 1.5 (continued)

the Republic of Korea and Taipei,China, net public transfers are funding about 33 percent of the lifecycle deficits of the elderly. Elderly people in the PRC and Japan rely more on public transfers than do the elderly in the US, but less than the elderly in many European welfare states.

Assets are an important source of support in all Asian countries except

Lee, Sang-Hyop, et al. "Overview: why does population aging matter so much for Asia? Population aging, economic growth, and economic security in Asia," pp. 1-31 in Park Donghyun, et al. (eds.) *Aging, Economic Growth, and Old-Age Security in Asia*, Edward Elgar, 2012.

New Mechanisms of Elder Poverty and Inequality in South Korea:

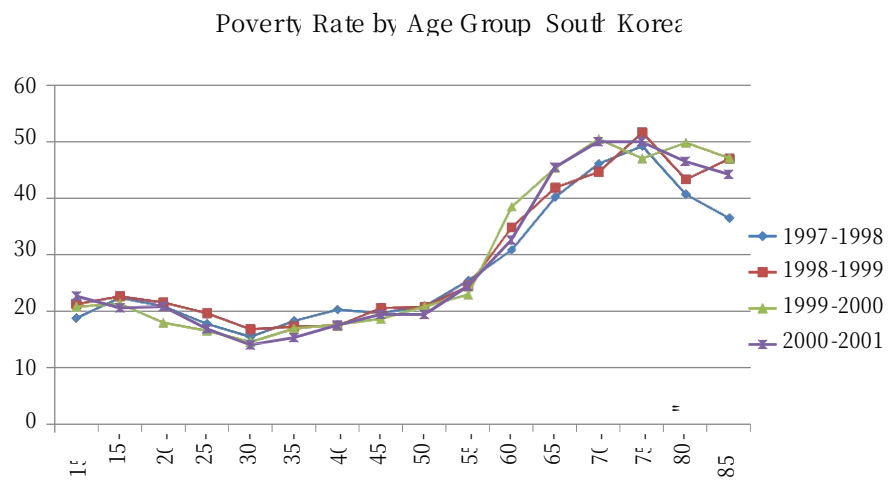
Family Change and Stratified Labor-Welfare System

PARK, Keong-Suk
Seoul National University

This study was supported by Korea National Research Foundation (NRF-2013S1A3A2043309) and presented in the session of social stratification and Inequality in South Korea, ISA Yokohama, July 7, 2014

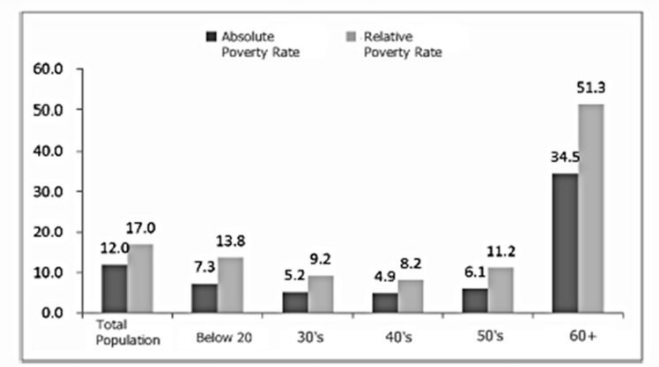
Contents

- Situation of Poverty and Inequality in Later Life, South Korea
- New Mechanisms for Poverty and Inequality
- Influences of Family Change
- Influences of Stratified Labor-Welfare Systems
- Discussion



Data: KLIPS, 1998-2001
Ref: poverty rate was measured by the level of minimum livelihood by household size

Poverty Rate by Age group, Korea, 2011



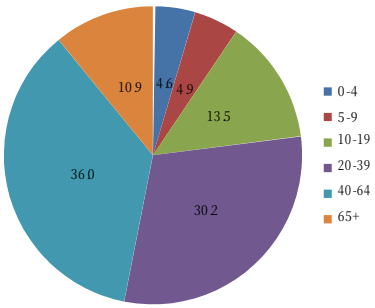
Absolute Poverty: when people do not have enough money to meet the basic threshold that is needed for survival. People fall below this line and do not have enough money to buy food, shelter, clothing etc. that is needed for survival.

Relative Poverty: when people are poor when compared to others around them, but may still have enough money to survive. It is based on the cultural environment around them, not to a basic amount necessary for all humans to survive.

Source: Statistics Korea

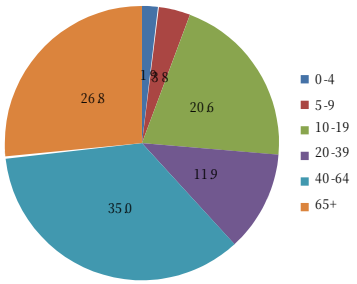
Poverty Risk by Age Group, 2010, South Korea

Population of Korea, 2010



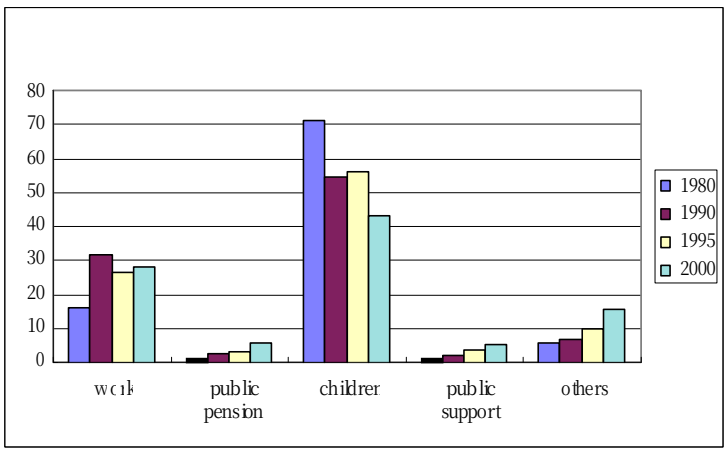
Source KOSIS

Population under Minimum Livilihood, 2011

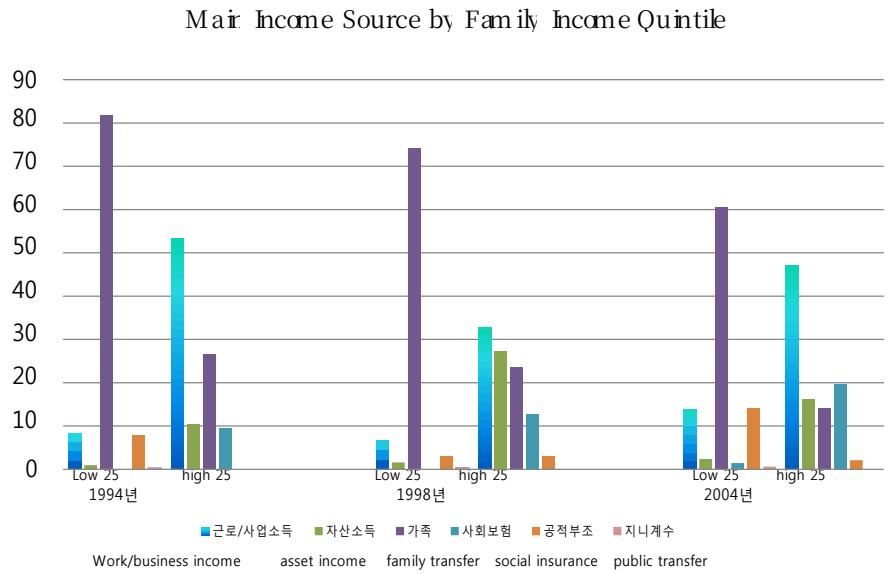


Source: Basic Livelihood Support Statistics, 2011, MOW

Main Income Source of the Aged 65 and Over, Korea



Source: Japan Cabinet Office. 2002. p. 177

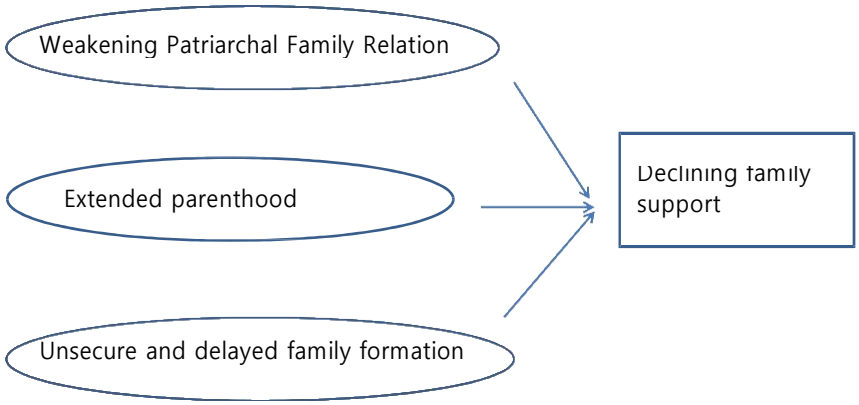


Source: survey of Elderly People's Life and Welfare Need, KIHASA, 1994, 1998, 2004

New Mechanisms of Poverty and Inequality in Later Life, South Korea

- Changing Causes of Poverty in Later Life
- Strong Relation between Poverty and Inequality
- Family Changes and its Influences on Income Support for the Elderly
- Segmented Labor–Welfare Systems and Cumulated Inequality in Life Course

Family Changes and Declining Family Support



Patriarchal construct of modern family in Korea

- Confucian and patriarchal family
- Hojuge, 戶主制 in the colonialized Korea
- Modern family law, 1958, mix up of Confucian family ideas, family head system in the colonized period, and nuclear family ideas
- Intergenerational strategy for economic development

Patriarchal prescription on old age support

- Patrilinear coresidence
- Filial piety
- Parents' authority
- Son's preference
- Perseverance of daughter in law

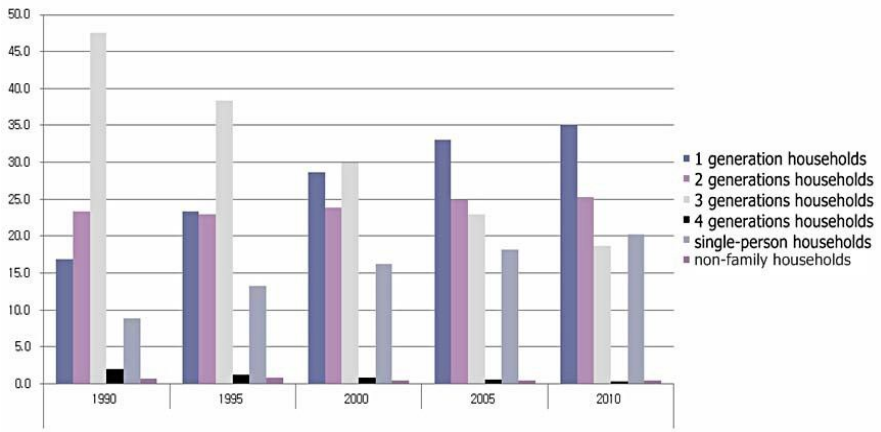
Declining patriarchal prescription on old age support

- the elderly parent's status within family significantly declined, and support from children also became regarded to be burdened to both parents and children
- Change in functions of extended family –from support for parental well being to support for children's family
- Children's complex feelings of guilt over not taking care of the elderly and burden over taking care of the elderly and wishing to be freed from doing so.
- Parents' fearing to be treated as burdensome, seeking independence, or accepting their subjugation.

Family becoming contested terrain between generations and gender

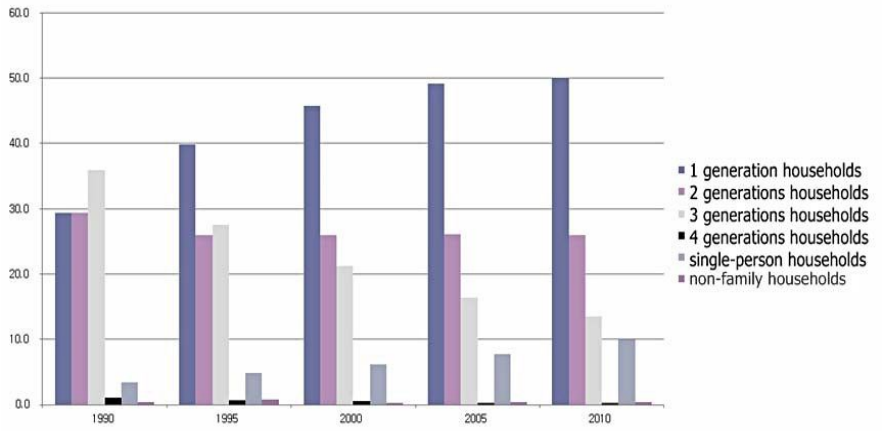
- The Chosun Daily,May 15, 1980. "In Spite of Children's Filial Piety, Elderly Parent's Alienation Because of the Loss of Their Autonomy to Govern the Family"
- Jan 13, 1983. "Younger Women Dislike Serving the Elderly"
- July 31, 1983." Divulging Children Who Threw Their Parents in an Institution"
- Aug 11, 1983. "New Goryojang" (old Korean burial custom whereby an old person was left to die in an open tomb)
- April 19, 1983. "There Are Many Virtues to Revise in Traditional Ideals of the Daughter in law"
- The Joong Ang Daily March. 17, 1984. "Mother in law and Daughter in law, What is the Problem?"
- Aug 21, 1984. "The Elderly Also Don't Want to Live with Their Children"
- May 20, 1984. "Family in Collapse"
- Nov 19, 1984. "Death of One Elderly Person amidst the Confusion of Nuclearlization"
- July 5, 1985. "The Victim of the Conflict between Mother in law and Daughter in law is the Mother in law"
- ..
- Mar 8, 1992. " A Succession of Suicides among the Lonely Elderly"
- Sept 10, 1994. "Pathology of Matricide"
- Sept 6, 1995. "Society Abandoning the Elderly"
- Oct 29, 1995. "Two Old Men Taking Their Own Lives, Depressed about Physical Suffering"
- Dec 9, 1996. "Rapid Increase in Elderly People Living Alone"
- Feb 4, 1997. "Elderly People 53% Living Apart from Their Children"
- May 7, 2002. "Suffering from Children's Harsh Words"
- April 16, 2004. "You Don't Know What I Feel"

Types of Households with Population of 65+, Korea, 1990-2010



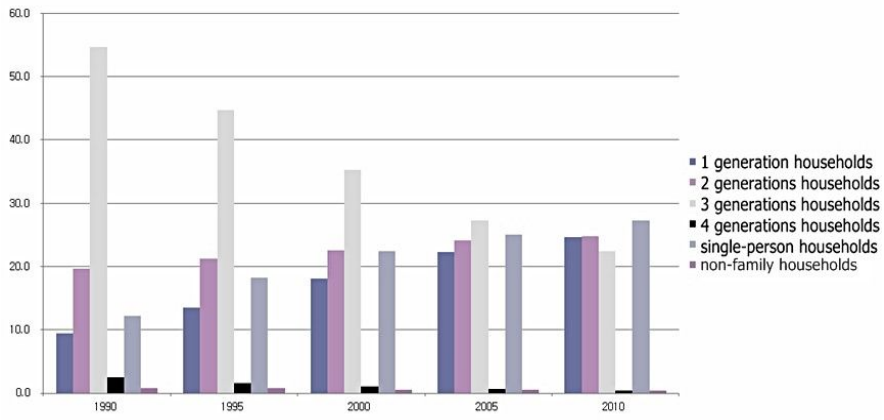
Source: Population and Housing Census

Households with Population of 65+ (male), Korea, 1990-2010



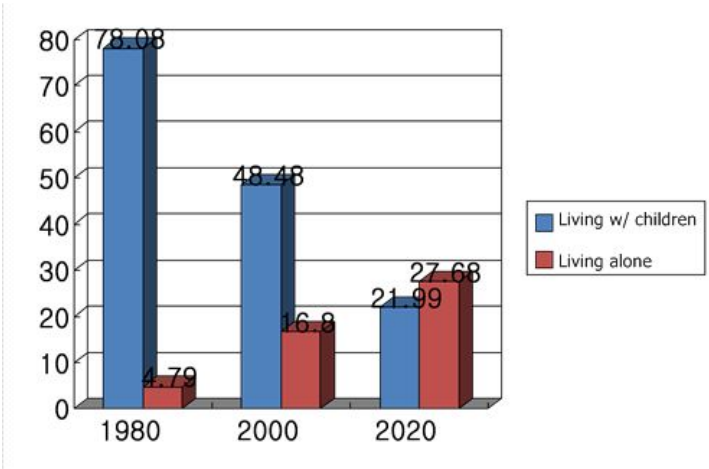
Source: Population and Housing Census

Households with Population of 65+ (female), Korea, 1990-2010



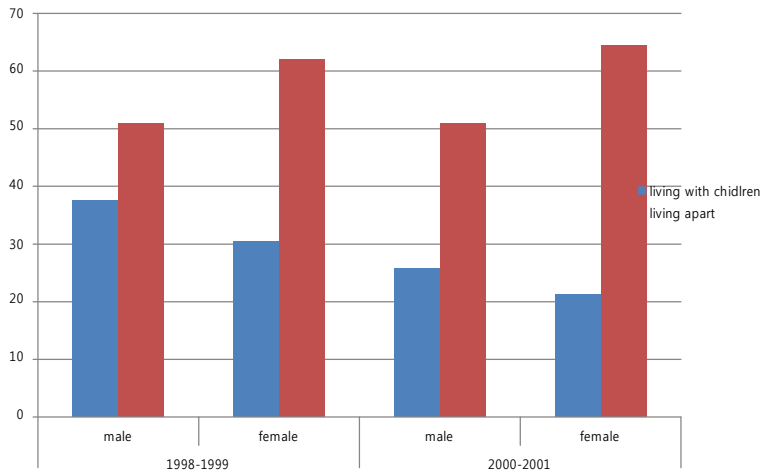
Source: Population and Housing Census

Living Arrangements for People 65+, Korea, 1980-2020



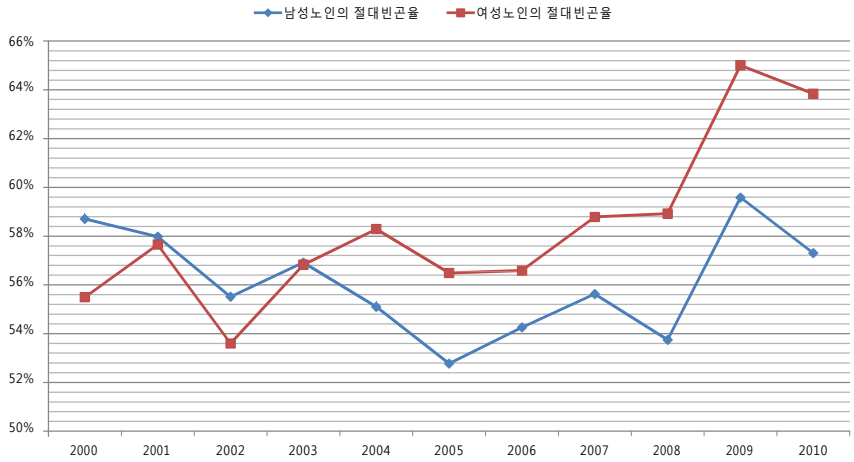
Source: Population and Housing Census

Poverty Rate by Coresidence with Children



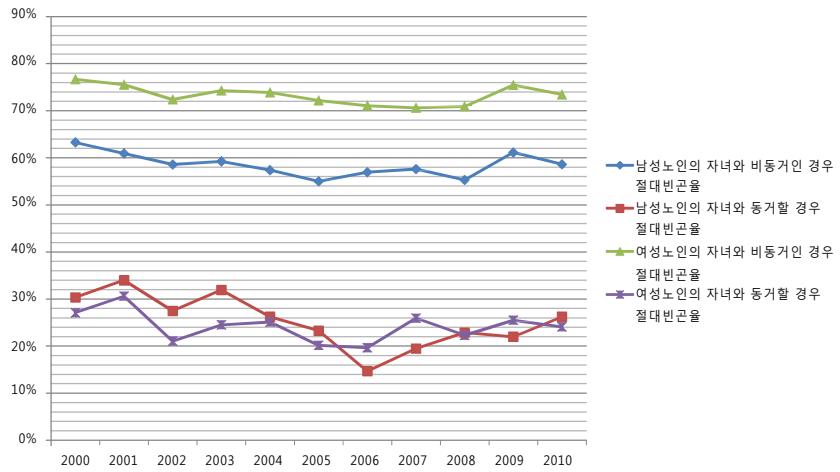
source: KlIPS , 1998-2001

Poverty Rate of the Aged 65 and over, South Korea



자료: 한국노동패널 3~13차 자료
주: 소득은 시장소득을 기준으로 하며, 각 년도 가구원수 별 최저생계비를 절대 빈곤의 기준으로 함

Poverty rate by living arrangement among the elderly aged 65 and over



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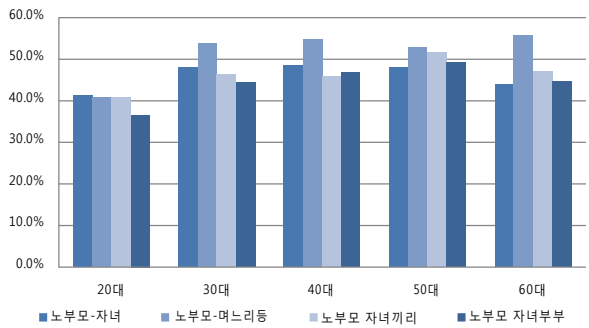
Poverty rate by living arrangement among the elderly aged 65 and over

	mak	mak	mak	femak	Femak	femak
	Living with spouse or alone	Living with children	total	Living with spouse or alone	Living with children	total
2000	63.26%	30.30%	58.70%	76.66%	27.06%	55.49%
2001	60.93%	33.96%	57.97%	75.51%	30.58%	57.65%
2002	58.58%	27.45%	55.51%	72.37%	21.03%	53.59%
2003	59.22%	31.91%	56.91%	74.28%	24.50%	56.82%
2004	57.36%	26.19%	55.09%	73.86%	25.09%	58.29%
2005	54.99%	23.26%	52.77%	72.16%	20.14%	56.49%
2006	56.93%	14.63%	54.25%	71.05%	19.64%	56.58%
2007	57.60%	19.44%	55.62%	70.60%	25.91%	58.78%
2008	55.29%	22.86%	53.74%	70.90%	22.26%	58.92%
2009	61.12%	21.95%	59.58%	75.45%	25.48%	65.00%
2010	58.62%	26.19%	57.30%	73.44%	24.05%	63.84%

사료: 한국노동패널 3~13자 사료
주: 소득은 시장소득을 기준으로 하며, 각 년도 가구원수 별 최저생계비를 절대 빈곤의 기준으로 함

Experiencing some conflicts about elderly parents' support



between parent & children, between parent & children in law, among children, between parents

Source: Survey on Generational Conflict and Communication, 2012 (Park et als. 2013)

Generational Relationship in Later Life, 1998

Coefficients (Conditional Probability) for Three Classes of Intergenerational Relationship among the Elderly (65 and over), 1998

		Latent Classes		
		Traditional	Reciprocal	Weak
		I	II	III
Geographic proximity	Living together	.68	.48	.08
	Separately	.33	.52	.92
Instrumental /economic support	Reciprocal	.00	.71	.01
	One-sided	.95	.29	.24
	No exchange	.05	.00	.75
Emotional support	Reciprocal	.23	.25	.14
	One-sided	.42	.37	.27
	No exchange	.35	.38	.59
Norm of Family	Normative	.44	.30	.25
	circumstantial	.56	.70	.75
Probability of Latent		.5	.20	.31

Park, 2003

Generational exchange of economic support

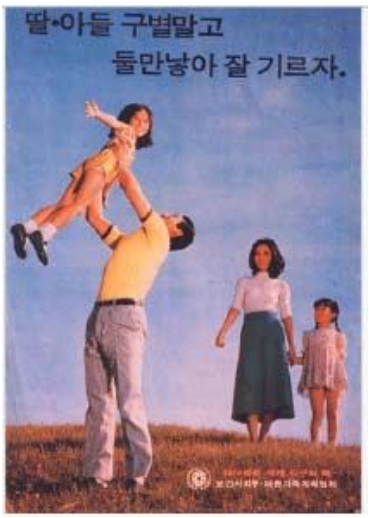
Respondent partner	20s		30s		40s		50s		60s	
	Give	receive	give	receive	give	receive	give	receive	give	receive
Parents	27.2%	67.9%	31.2%	27.9%	20.8%	17.5%	14.1%	10.8%	7.2%	1.2%
Children	2.4%	0.4%	37.5%	1.8%	62.5%	2.4%	64.0%	21.8%	50.3%	54.5%
Parents in law	0.6%	0.4%	6.9%	8.4%	8.3%	5.8%	4.1%	0.4%	0.6%	0.0%
No support	69.8%	31.3%	24.4%	62.0%	8.4%	74.3%	17.7%	67.1%	41.8%	44.3%

Source: Survey on Generational Conflict and Communication, 2012 (Park et als. 2013)

Extended parenthood

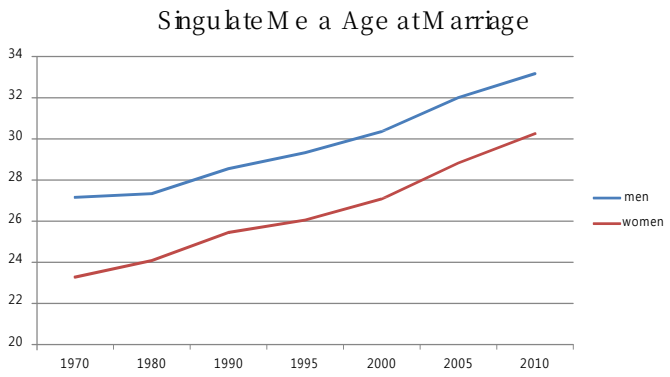
- People's anxiety for nation construction and happy family
- Learning and embodying development-centered Perspectives
- Diffusion of the Idea of Nuclear Family
- Women's Identity as Housewife and Education Mother
- Parents' Anxiety for Children's Education
- Delayed Reliance of the Youth on Parents' Resources

Poster in the 1960s: "Let's have an adequate number of children and raise them well"
by P.P.F.K. (The Planned Parenthood Federation of Korea) and KIHASA (Korea Institute of Health and Social Affairs)



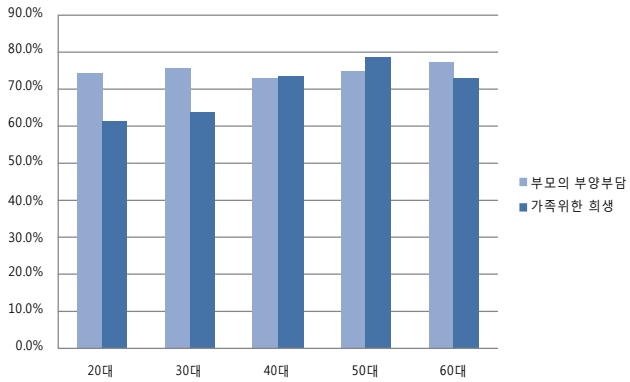
Advertisements in the 1970s: “Let’s not differentiate between boy and girl. Let’s have two children only and raise them well.”

Posters in the 1980s: “Let’s not differentiate between boy and girl. Let’s have two children and live prosperously.”
by P.P.F.K. (The Planned Parenthood Federation of Korea)



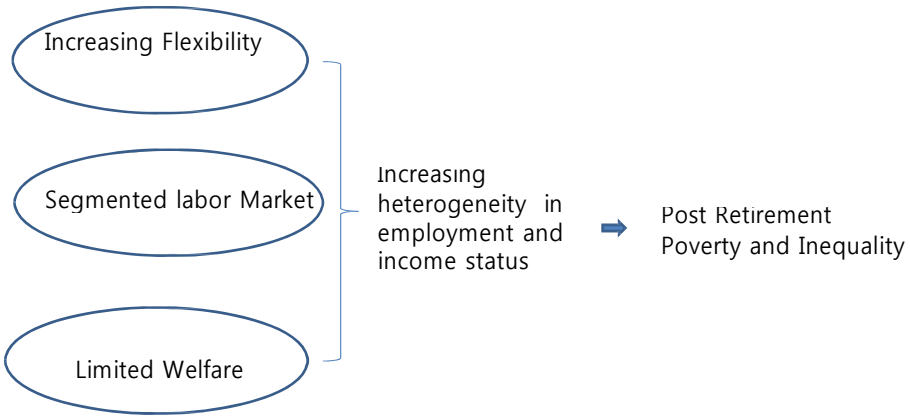
Source: Census of Population, KOSIS

Burdened feeling about parenthood, Willingness to sacrifice for family



Source: Survey on Generational Conflict and Communication, 2012 (Park et als. 2013)

Mechanism of Stratified Labor –Welfare in Increasing Poverty Risk and Inequality



Increasing flexibility since 1990s

- Legalization of layoff and detached work in 1997
- Remarkable change in employment status among employees, irregular workers 50 percent of the total employees in 2000
- Increasing gap between large and small company in productivity and employment status

Labour market and tenure system

- Very frequent job changes and short term of tenure in Korea
- partly due to relatively short history of industrialization
- partly due to segmentation of labor market, labor in periphery sectors less likely to develop tenure
- segmentations by education and gender are strong
- segmentations by sectors such as company, and employment status become stronger

Density of Labor Exit

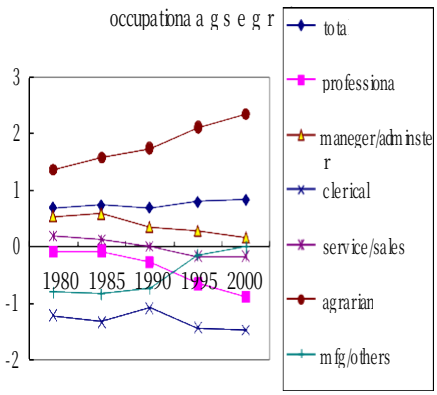
Density and Rate of Labor Exit among Workers aged 55 and over

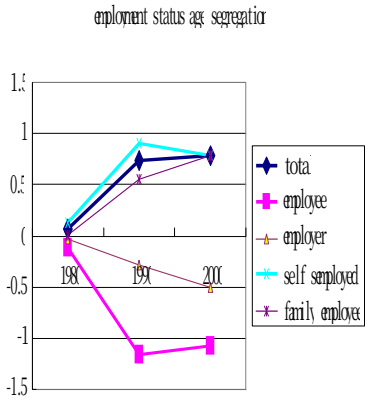
		RRR (Cox model)	RRR (Logit model)
occupation	Professional/administrative	***0.68***	0.68
	Clerical	0.89	1.68
	Sales/service	1.24	1.33
	Agrarian	***0.29***	***0.26***
	(ref: manufacturing/other laborers)		
Employment status	Temporary	1.19	***1.89***
	Self employed	***0.54***	0.36
	Family employee	***0.45***	0.53
	(ref: regular employee)		
Size of company	Less than five workers	***0.52***	***0.54***
	(ref: five and more workers)		
Entitlement of national pension	Entitled	1.07	***2.79***
	(ref: no entitlement)		

Note: estimates in italics are statistically significant at the significant level below 0.05

Source: Park, 2003

Age segregation in occupation and employment status





Source: Park, 2003

Hybrid of Early Exit and Delayed Exit

- early exit without compensation, delayed exit of the poor,
- Early retirement –regular employee workers in primary labor market, the main reason for retirement is employment restructuring, honorable retirement, lay offs
- Delayed exit –the proportion of the elderly working as agrarian, self employed and marginal employees has increased since the 1980s. The main reason for work derives from economic need for subsistence

Stratification in Employment Status and Income

- unbeneficial economic class over the life course
- Continuity of women's unbeneficial status in labor status
- Various types of unstable workers, their deliberate exclusions in the labor market, work place, and public recordings
- Trapped in disadvantaged work condition
- Disadvantages during the working life culminating with the risk of chronic poverty in later life

Inequality triggered by welfare policy

- Extension of welfare policy since the late 1990s- extension of National Pension, introduction of long term care insurance since 2008, but limited extension of welfare right
- deliberate exclusions which renders disadvantaged workers invisible in the social security systems
- despite the legislative extension of the coverage, many unstable workers voluntarily deny the access, partly due to the unwillingness to deposit some part of their earnings for their post retirement because of an imminent need to meet their daily expenses

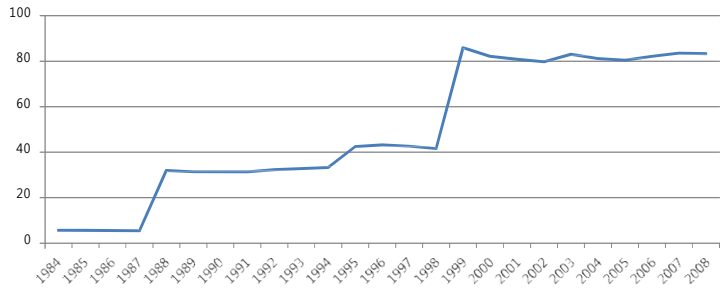
- Frequent job changes and the lack of concrete employment contracts make irregular workers invisible in public labor recordings used to determine the entitlement of the social security benefits.

Coverage Rate of Public Pension

[Table 1> The Development of the National Pension System and the Coverage Rate in South Korea

Year		Coverage rate for the total workers, %			
		Government/ military insurance	Private school teacher insurance	National insurance	total
1960	Government insurance	-	-	-	-
1963	Military insurance	-	-	-	-
1973	Private school teacher insurance	-	-	-	-
1988	National Pension (companies with 10 or more workers)	4.6	0.8	26.3	31.7
1992	National Pension (companies with 5 or more workers)	4.8	0.9	26.4	32.1
1995	National insurance (rural/fishery workers)	4.7	0.9	35.5	41.1
1999	National Pension (companies with less than 5 workers, self employed in urban sectors)	4.5	1.0	53.0	58.5
2000		4.3	1.0	55.9	61.2

Coverage rate of Public Pension



Source: National Pension Statistics, 2011, MOW

The intersecting association between employment and social benefits

Characteristics of Employed Workers, 50-54, 1999

		Workers entitled t NP	Workers not entitled t dNP	Tota
Gender	Male	79.7	45.1	62.2
	Female	20.3	54.9	37.9
	Total (N)	100.0 (592)	100.0 (610)	100.0 (1,202)
Education	Primary	12.2	25.9	19.1
	Middle	16.7	29.0	23.0
	High	40.5	36.1	38.3
	College +	30.6	9.0	19.6
	Total (N)	100.0 (592)	100.0 (610)	100.0 (1,202)
Occupation	Adm/manager/prof	28.0	10.8	19.3
	Clerical	13.7	5.7	9.6
	Sales	7.4	22.0	14.8
	Product	41.1	35.8	38.4
	Menial	9.8	25.7	17.8
	Total (N)	100.0 (584)	100.0 (600)	100.0 (1,184)
Labor status	Full time	93.2	42.4	67.5
	Part time	6.8	57.6	32.5
	Total (N)	100.0 (591)	100.0 (608)	100.0 (1,199)
Size o company	Less than 5	1.6	39.1	20.4
	5-9	5.3	17.2	11.2
	10-29	14.3	21.2	17.8
	30-49	9.3	5.3	7.3
	50-69	9.3	2.7	6.0
	70-99	6.9	1.1	4.0
	100>=	53.4	13.4	33.4
	Total (N)	100.0 (551)	100.0 (552)	100.0 (1,103)
Duration o employment	Mean (years, N)	10.7 (589)	4.8 (604)	7.7 (1,193)
monthly earning income (N)	Mea (10,000 won, N)	146.4 (592)	84.9 (610)	115.2 (1,202)

Source: Park, 2003

The intersecting association between employment and social benefits

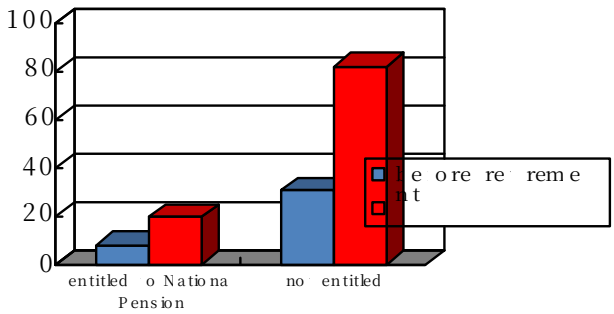
Family Income and Asset Level of Employed Workers, 1999

	Workers entitled to NP	Workers not entitled to NP
Net family income in the last employment year, 10,000 won (N)	2,735.6 (570)	1,608.6 (583)
Labor income, monthly (N)	212.3 (590)	133.0 (609)
Monetary income, per year (N	91.8 (589)	25 (608)
Real estate income, per year (N	93.2 (590)	33 (609)
Public and private transfer income, per year (N)	11.1 (590)	27 (609)
Other per year (N	152.1 (590)	98 (608)
Debt, monthly (N)	14.8 (586)	12 (600)
% of family income under minimum livelihood by family members of the 1998	8.2 (570)	30 (583)
Net Asset value in the last year, 10,000 won (N)	2245.9 (481)	283.3 (548)
Financial asset (N)	2067.8 (584)	1,044.5 (606)
Real estate (N	1344.6 (490)	429.5 (556)
Debt (N)	1126.5 (586)	1099.4 (606)

Source: Park, 2003

The intersecting association between employment and social benefits

poverty rate of employee workers aged 40 to 54



Source: Park, 2003

Discussion

Mechanisms of Poverty and Inequality of the Korean Elderly – Family, Labor, Welfare

- Family – the most prevalent source of welfare, but controversy about its potential and sustainability. Key argument is that the role and sustainability of family as primary welfare source was hampered
- The emphasis on family support often elapses into the rhetoric of a cultural placebo to what structural rearrangements are substantially in need
- Increasing labor flexibility generally impairs employment status and make unstable retirement
- Increasing importance of economic participation at advanced ages but the simultaneous restructuring of old workers into secondary and marginalized jobs.

Discussion

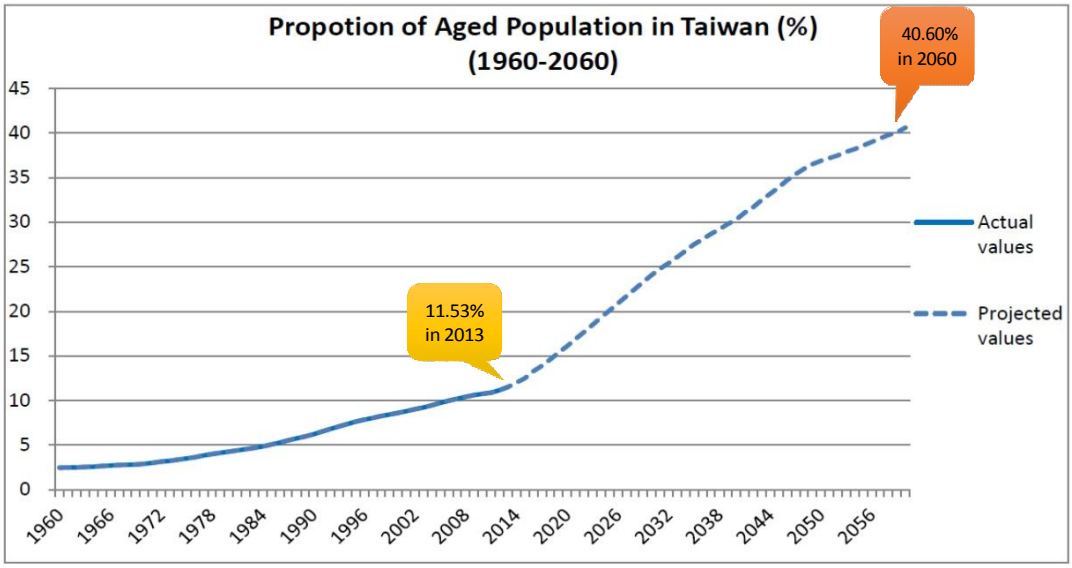
Mechanisms of Poverty and Inequality of the Korean Elderly – Family, Labor, Welfare

- the strong linkage between labor stratification and selective social security.
- Gender, educational achievement, and employment status are intimately related to each other and delimit the access to social security benefits, differentiating income levels in old age.
- Unstable workers not only suffer from low income levels and employment instability, but also limited access to the social security benefit.
- The result of the cumulated disadvantages in the labor market/work place and in the social security system reveals the formation of new class, who are subjected to unbeneficial economic conditions over the life course and a chronic poverty risk in post retirement.

Familial support and living arrangement of the elderly people in Taiwan

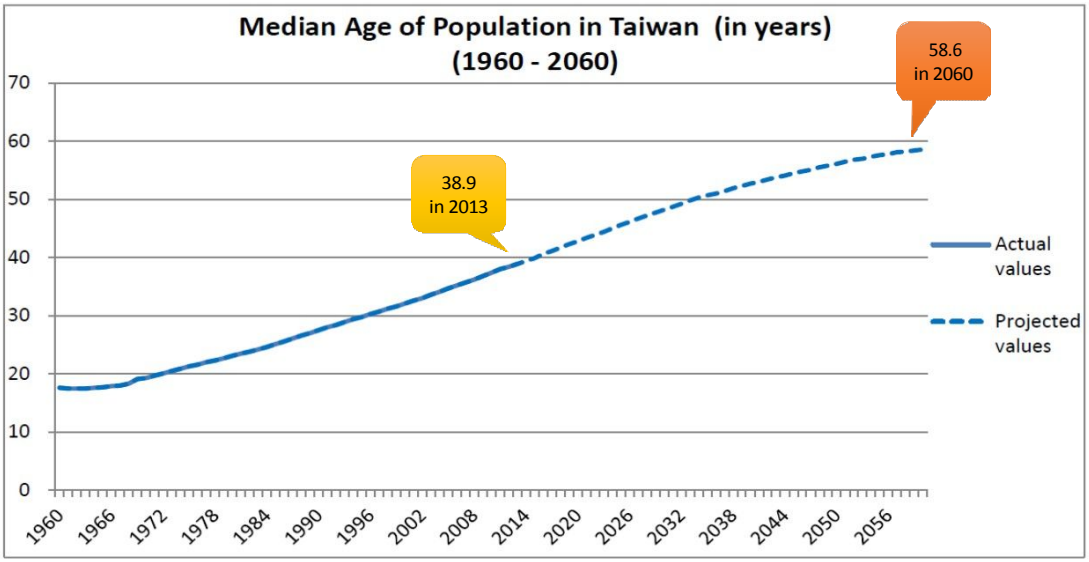
Ruoh-rong Yu
Center for Survey Research
Research Center for Humanities and Social Sciences, Academia Sinica

Population Aging in Taiwan: Past and Future



Source: National Development Council, Taiwan

Note: The dotted lines indicate the projected values.



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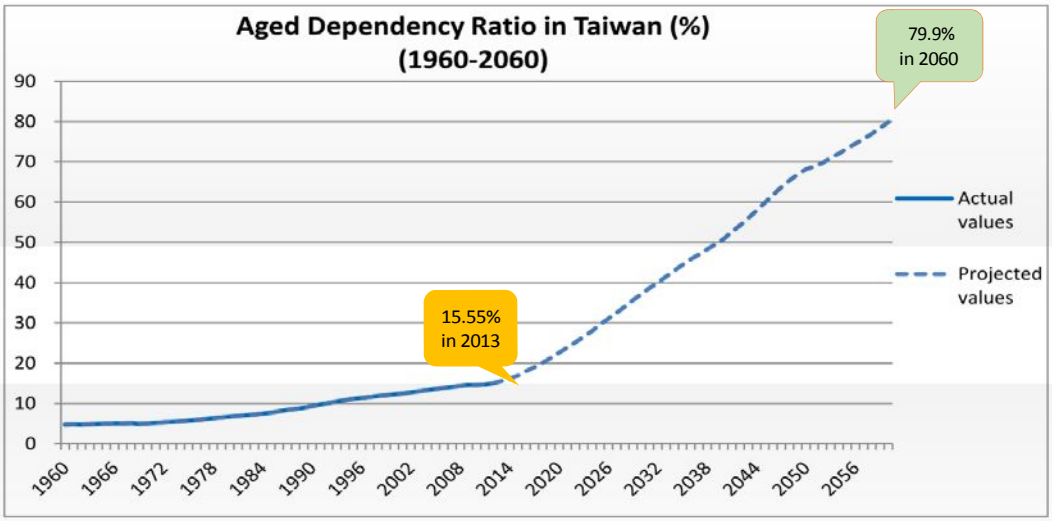
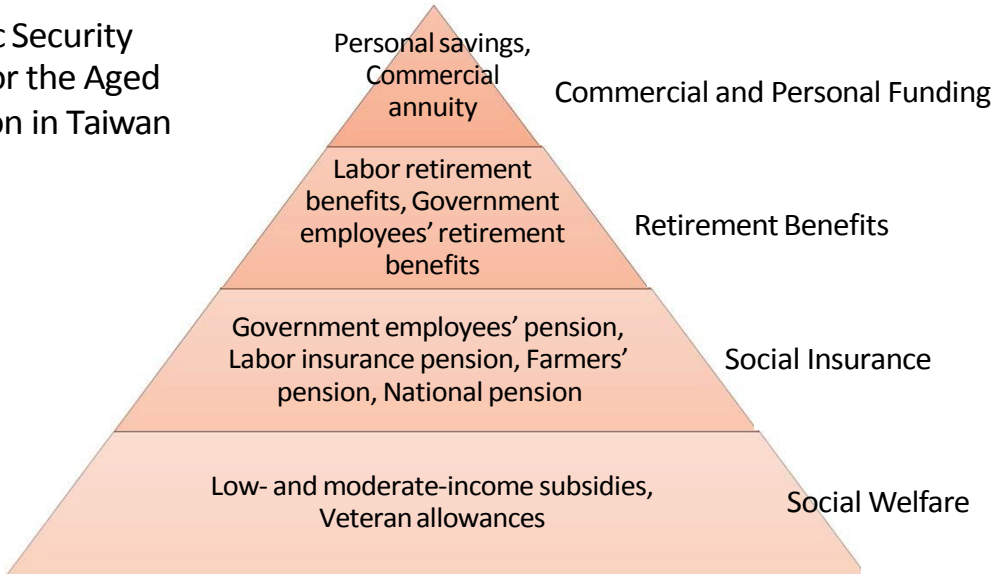


Source: National Development Council, Taiwan

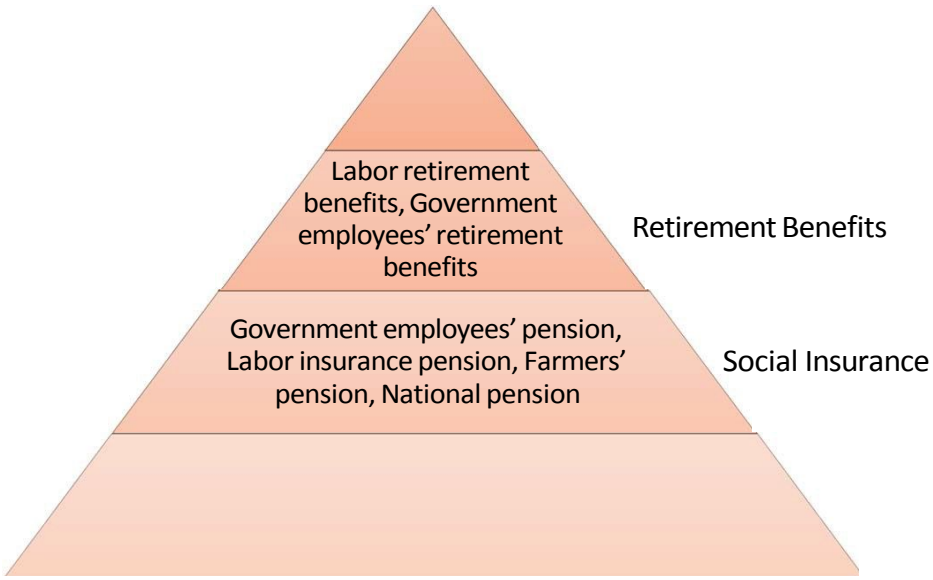
Note: The dotted lines indicate the projected values. The definition of aged dependency ratio is [(number of people aged 65 or above) / (number of people aged 15-64)] × 100%.

Economic Security System for Aged Population in Taiwan

Economic Security System for the Aged Population in Taiwan



Economic Security System for Aged Population in Taiwan: Retirement Benefits and Pensions



Retirement Benefits and Pensions

- Labor Insurance Payments (1950)
- Government Employees' Retirement Payments and Pension (1958)
- Farmers' Pension (1995)
- National Pension (2008)

Labor Insurance Pension (勞保年金)

- Retired employees of private sector
- Monthly pension
- Eligible at age 60 and with 15 years of labor insurance (age requirement shall be raised to 65 by 2027)
- The amount of pension depends on the average insured monthly income (the upper limit is now 43,900 NTD) and the years of labor insurance.
- In addition to pension, retired employees are eligible for retirement benefits, which can be in lump-sum or monthly basis.

Government Employees' Retirement Benefits

- Retired civil servants, public school teachers, and soldiers
- Lump-sum payment and/or monthly pension
- Eligible at age 60 and with 5 years of service, or after 25 years of service (requirement for monthly pension is more stringent)
- The pension income replacement ratio can be as high as 100% (the upper limit shall be reduced to 80% by 2022).

Farmers' Pension (老農津貼)

- Farmers and Fishermen who reach certain age
- Monthly pension
- Eligible at age 65 and with at least 0.5 year of farmers' insurance
- The amount of pension has increased from 3,000 NTD in 1995 to 7,000 NTD in 2011.

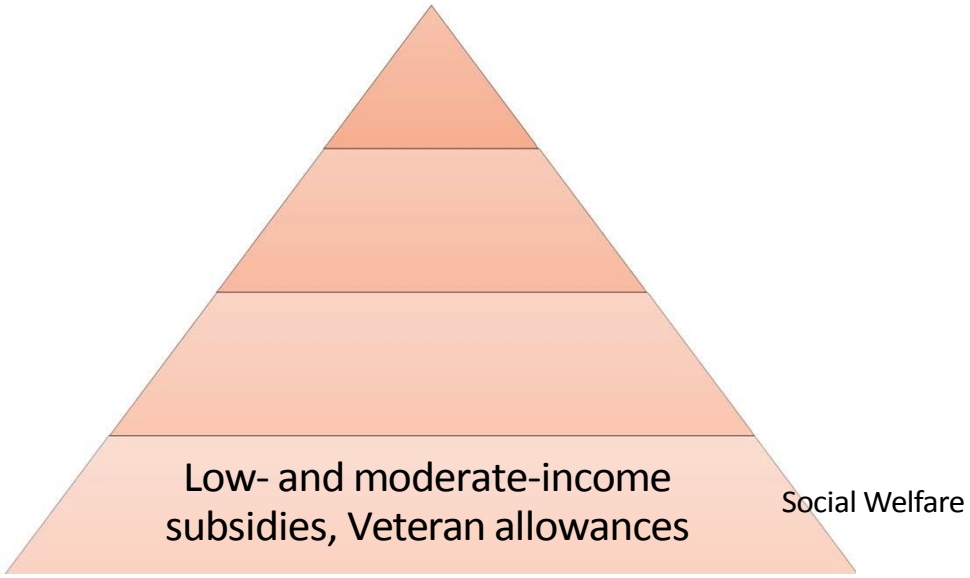
National Pension (國民年金)

- Those who are not eligible for labor insurance, farmers' insurance, and government employees' insurance. The insured persons are mainly students, housewives, and unemployed.
- Monthly payments
- Eligible at age 65
- The basic monthly pension is 3,500 NTD. The extra insurance payments depend on the years of insurance and the insurance premium.

Retirement Payments and Pensions: Potential Crises

- No comprehensive pension program for the aged
- Huge discrepancies among different types of pension
  - For example, the income replacement ratio for government employees' pension is about 90%, yet that of the labor pension is often less than 20%
- Many jobless persons cannot afford pension premium of the National Pension
- Insurance premium are relatively low as compared to the amount of retirement payments or pensions
- Rates of return for pension fund are low in recent years
- Declining fertility rate and increasing life expectancy have deteriorated the financial situation of pensions

Economic Security System for Aged Population in Taiwan: Social Welfare



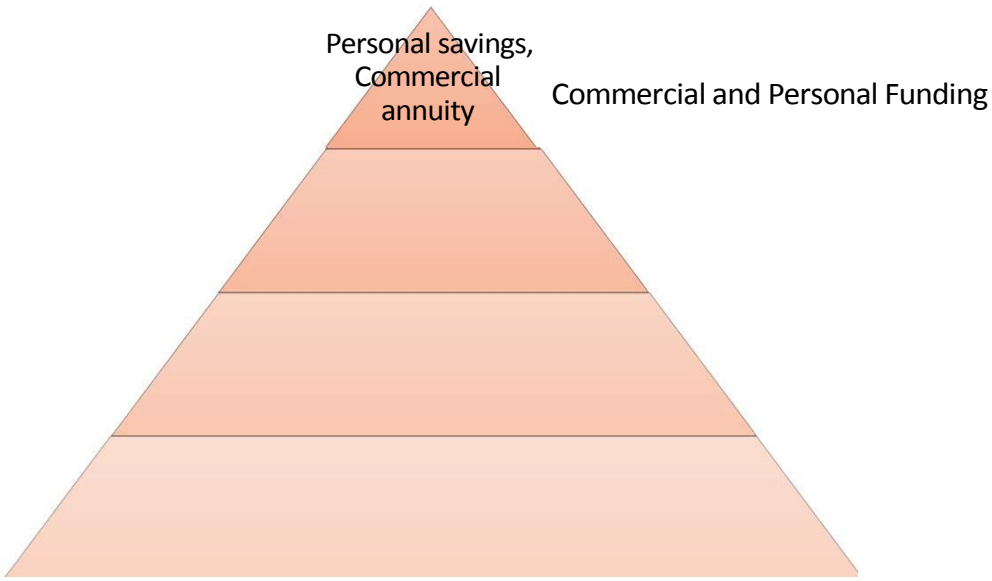
Social Welfare Services for the Aged

- Local governments
  - Elder allowances
  - Low- and moderate-income living allowances for the aged
  - Low- and moderate-income nursing allowances for the aged
  - Subsidies for the disabled aged
  - Day-care and/or home nursing services for the disabled aged
  - Traffic, rehabilitation, and meal services for the disabled aged
- Social welfare programs provided by central government
  - Veteran allowances

Social Welfare Programs: Potential Crises

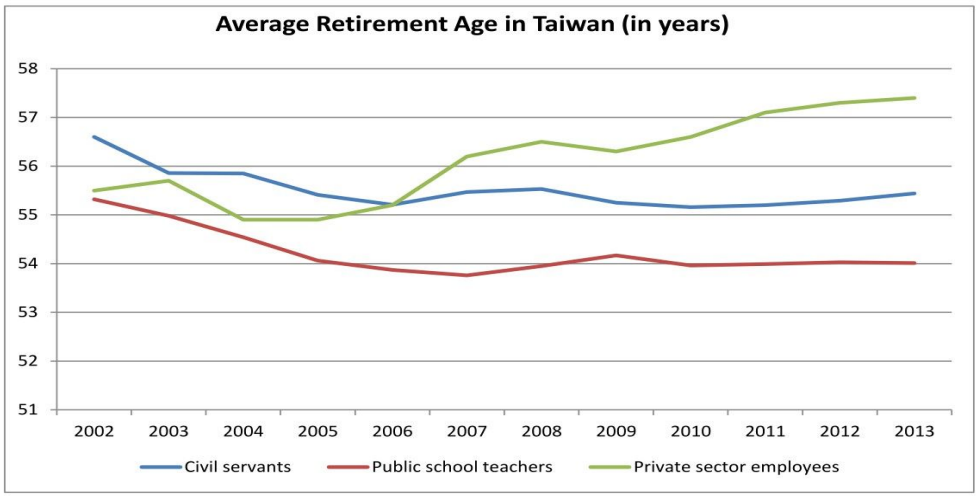
- Within the total government expenditure in 2012,
  - The social welfare expenditure is about 23%
  - The pension and compensation expenditure is about 7%
- Not to mention similar problems to the social security programs

Economic Security System for Aged Population in Taiwan: Commercial and Personal Funding



Labor Force Participation of the Aged

- Early retirement
  - The average retirement age of government civil servants has reduced from 60.8 in 1997 to 55.4 in 2013. During the same period, the average retirement age of school teachers has declined from 58.0 to 54.0.
  - The average retirement age of private sector employees in 2013 is 57.4.
- Low labor force participation rate of elder population
  - In 2013, the labor force participation rate of population aged 55-59 has declined to 53.2%, and that of those who aged 60-64 is 33.4%.

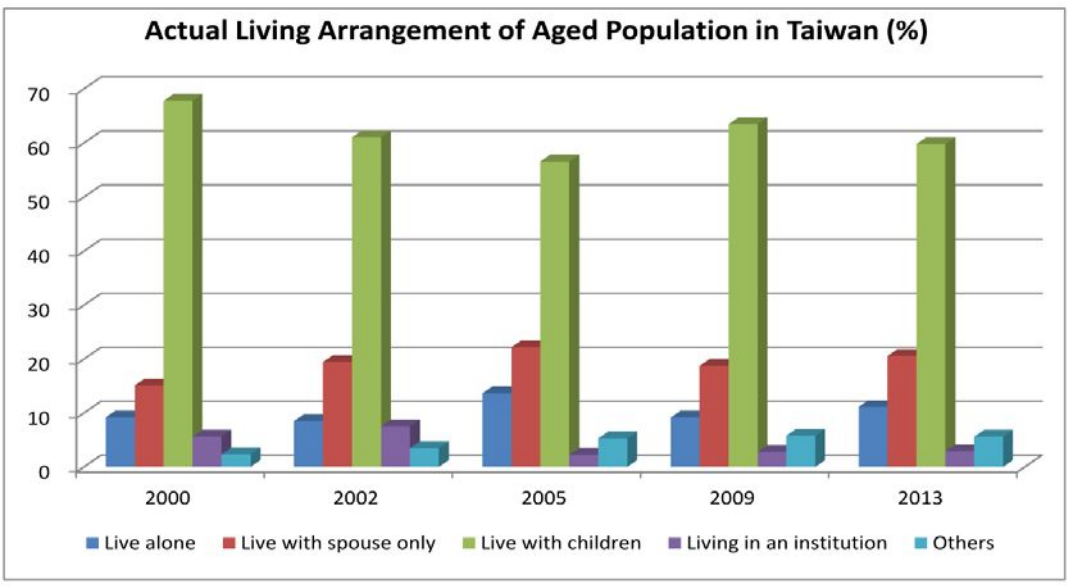


Source: The numbers of "civil servants" and "public school teachers" are from the Public Service Pension Fund, Taiwan. The numbers of "private sector employees" are from the Directorate-General of Budget, Accounting and Statistics, Taiwan.

Wages, Savings and Commercial Annuity in Taiwan

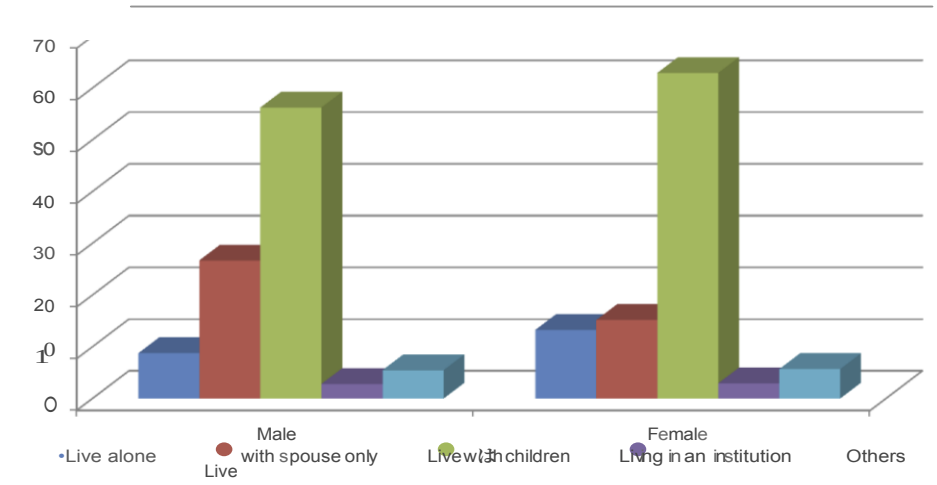
- The average monthly real wage income in 2014 is about 46,786 NTD, which is almost the same as that of year 1997 (46,646 NTD).
- The savings rate of households in Taiwan has reduced from 30.7% to 20.6% during the past twenty years.
- After the financial crisis in 2009, the rate of return for financial investment has become more uncertain.
- People who bought commercial annuity and life insurance are relatively few.
- However, there is a comprehensive National Health Insurance program in Taiwan.

Living Arrangement of Aged in Taiwan: Actual and Preferred



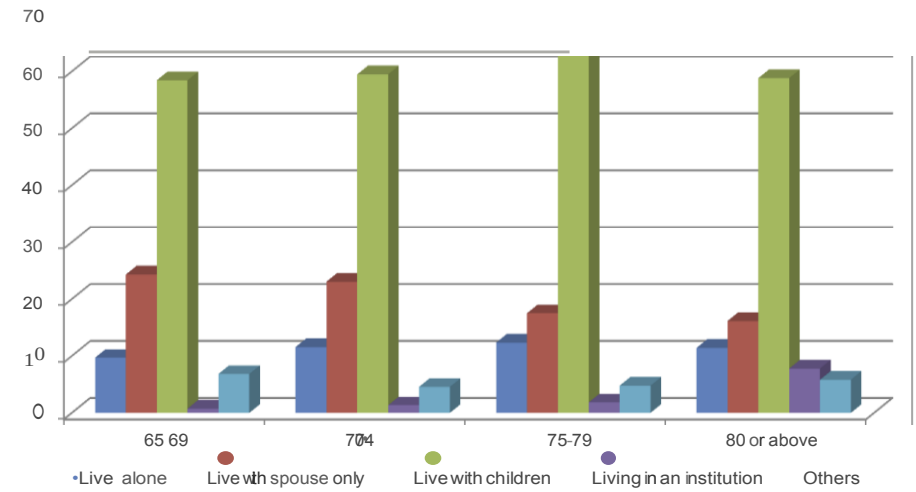
Source: Report of the Senior Citizen Condition Survey, Ministry of the Interior, Taiwan

Actual living Arrangement of Aged Population in 2013: By Gender (%)



Source: Report of the Senior Citizen Condition Survey, Ministry of Health and Welfare, Taiwan

Actual Living Arrangement of Aged Population in 2013: By Age (%)



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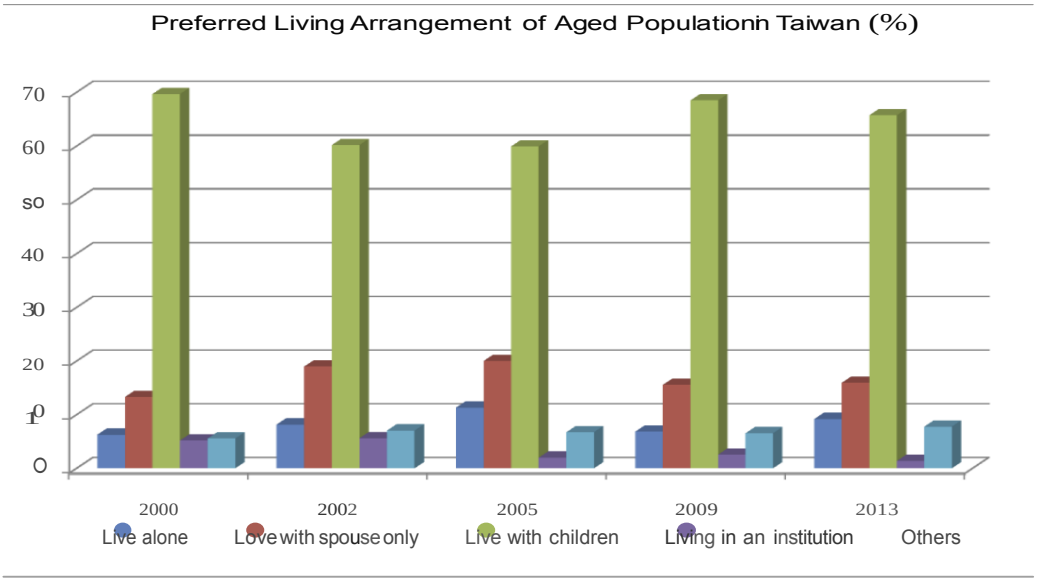

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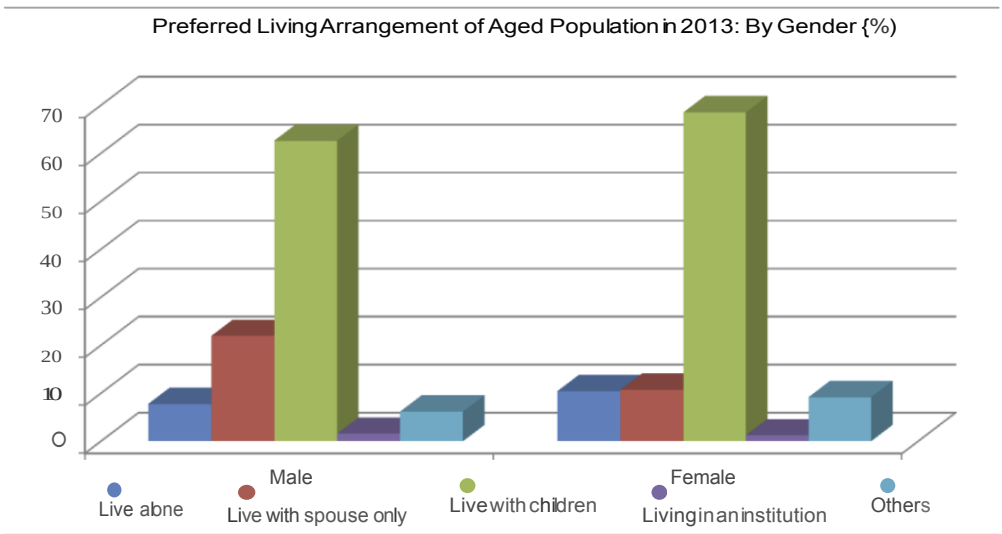

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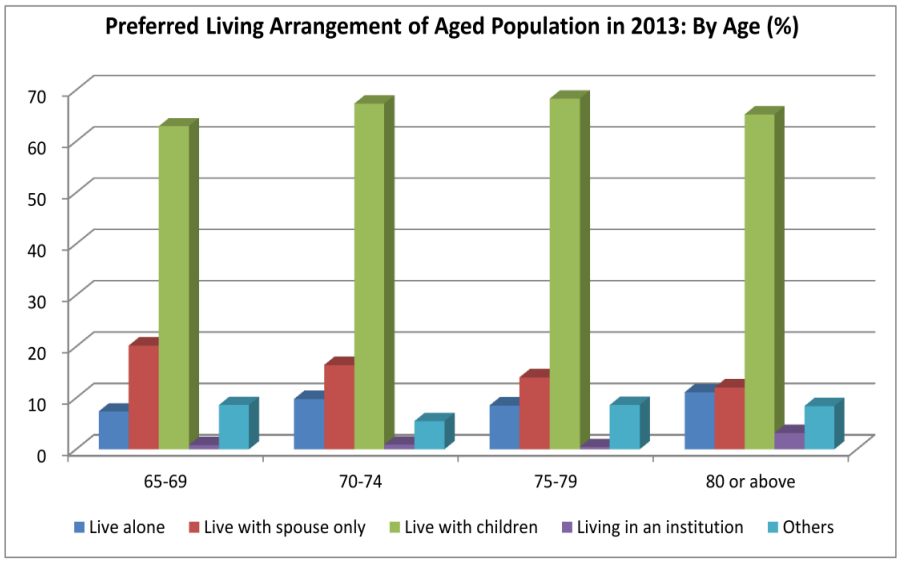
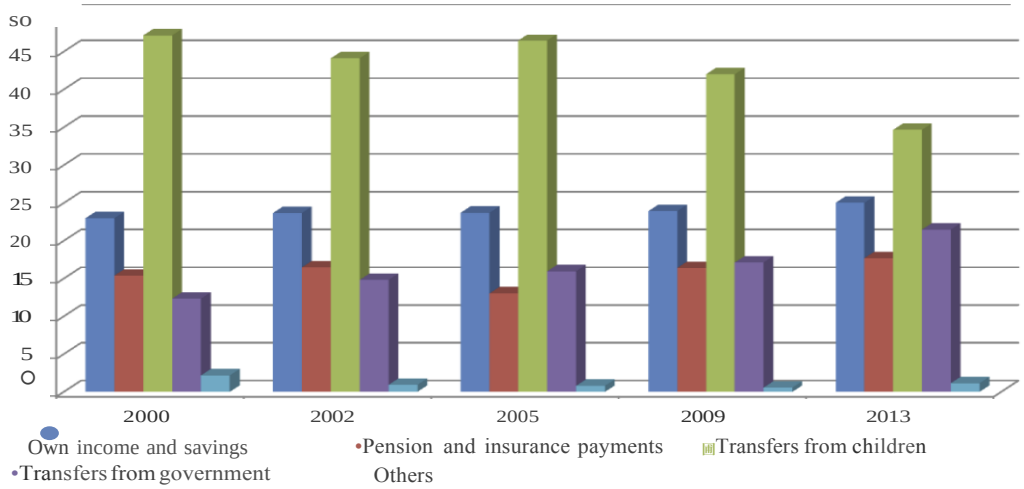


Source: Report of the Senior Citizen Condition Survey, Ministry of Health and Welfare, Taiwan

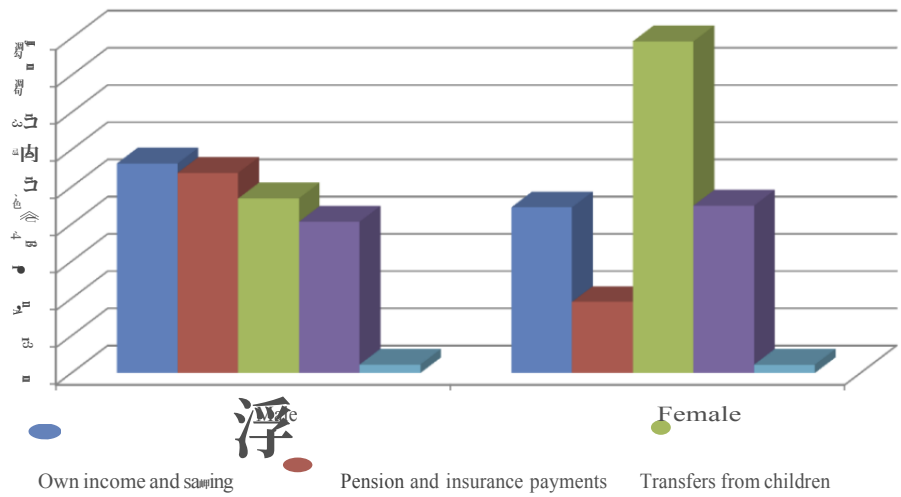
Sources of Living Expenses of Aged in Taiwan

Main Source of Living Expenses of Aged Population in Taiwan (%)



Source: Report of the Senior Citizen Condition Survey, Ministry of the Interior, Taiwan

Main Source of Living Expenses of Aged Population in 2013:By Gender (%)



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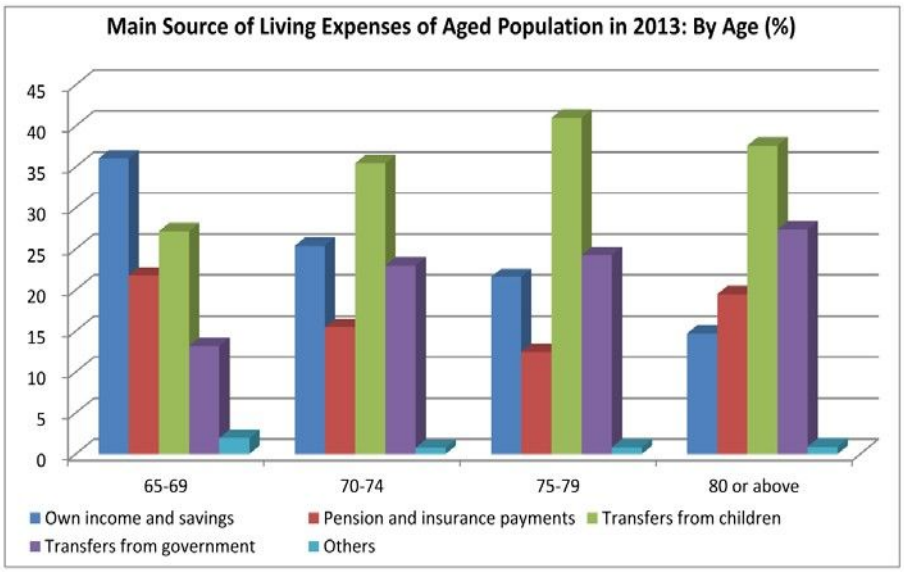


Source: Report of the Senior Citizen Condition Survey, Ministry of Health and Welfare, Taiwan

Summary

Summary (1/4)

- Population aging has become a critical social and economic issue in Taiwan.
- The existing retirement benefit and pension programs in Taiwan face serious problems:
  - Declining working-age population
  - Prolonged life expectancy
  - Insurance premiums relatively low as compared to insurance payments
  - Rates of return of pension funds not ideal
  - Frequent elections made it difficult to cut the benefits and pension, or to raise the eligible requirements or insurance premiums

People may not believe the programs will sustain in the future.

Summary (2/4)

- The deteriorating labor market conditions make the adults hard to accumulate enough financial assets for retirement.
- Urbanization and declining fertility have weakened the potential support from family members.
- The National Health Insurance, though comprehensive, should be reformed soon to avoid deficits.

It is challenging to sustain the living expenses and provide adequate supports for the aged in Taiwan.

Summary (3/4)

- Actual living arrangement of the aged
  - In recent years, more than half of the aged population co-resided with their children, only few (less than 5%) resided in institutions.
  - However, the elders aged 80 or above are more likely to reside in institutions, as compared to the younger elder groups.
- Ideal living arrangement of the aged
  - The most preferred living arrangement for the elders is co-residing with children.
  - The proportion of the elders who preferred institutions has even declined over time.

Summary (4/4)

- In the past ten year, most elders relied on financial transfers from children as the main source of living expenses. However, the proportion has declined over time.
- As the elders became older, they relied more and more on subsidies from the government, while own income, savings and assets became less and less important.

As fertility declines, the government has to build a stronger and comfortable social security network for the aged population.

Thank you for your listening!

yurr@gate.sinica.edu.tw

International Seminar on "Comparative Study on Population Aging in Eastern Asian Low Fertility Countries"

Population Aging and Public Health Insurance Reform in Rural China

Kyoto University Graduate School of Pharmaceutical Sciences

Xinxin Ma

Feb. 20th, 2015, Kyoto University

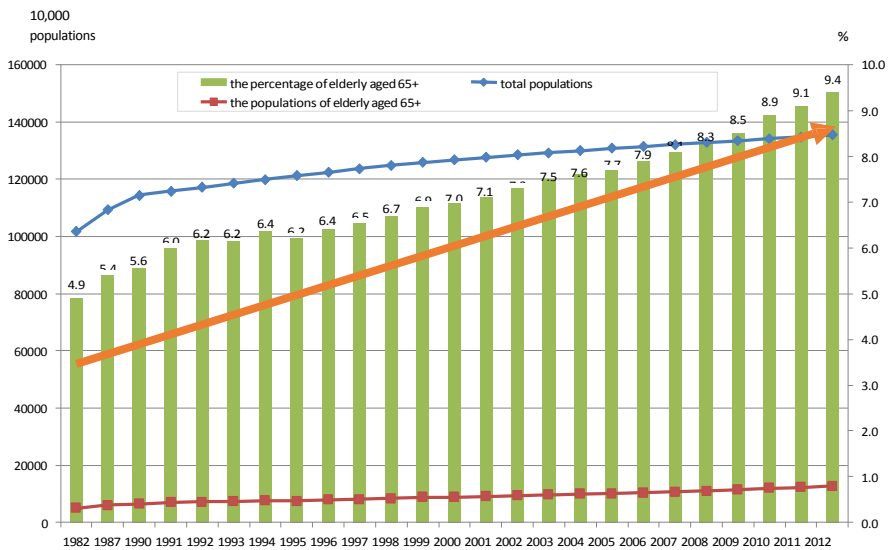
Outline

1. Introduction
2. The Reform of Public Health Insurance in Rural China
3. *Literature Review*
4. Methods
5. Results
6. Conclusions

1. Introduction

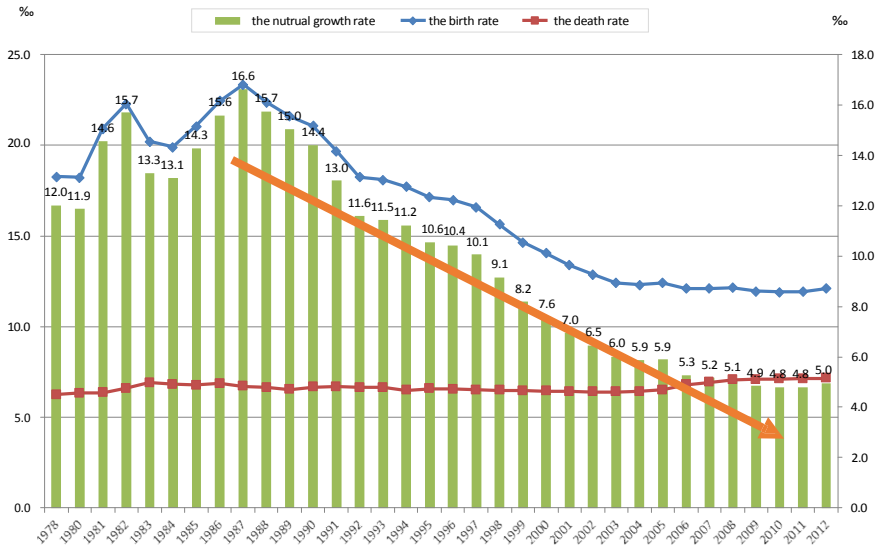
- Population Aging is progressing in rural China (Fig.1).
  - ➢ One-child policy (Fig.2)
  - ➢ Migration from the rural districts to the urban districts (Fig.3)
- Although during the planned economy period (1949~1977), the **Cooperative Medical System** (CMS:农村合作医疗制度) was established in the rural districts, it was collapsed in the 80s along with the economic reform (Fig.4).

Fig.1 Trends of the Percentage of Elderly Aged 65+



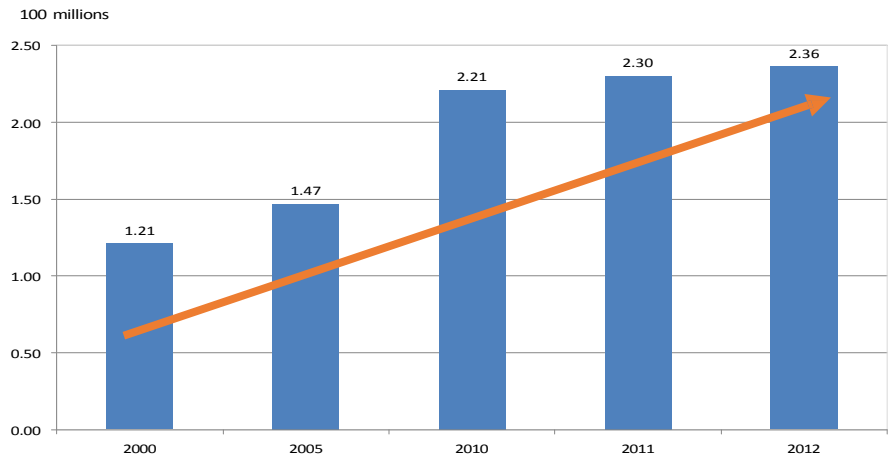
Sources: NBS (2013) *China Statistic Yearbook 2013*.

Fig.2 Trends of the Population Birth Rate in China



Sources: NBS (2013) *China Statistic Yearbook 2013*.

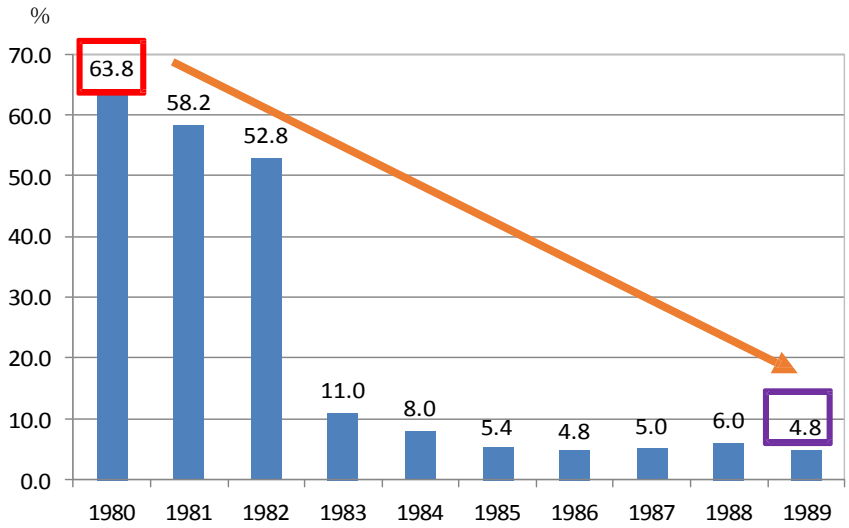
Fig.3 Trends of the Migrants in China



sources: Chinese population cencus.

Migrants:Those who move from the rural district to the urban district and work as the employer or the self-employed in the urban district with the rural registration.

Fig.4 Participation Rate of the Rural Cooperative Medical System(CMS)



1. Introduction

- After 1990s, as it was said as “看病难,看病贵" (“To receive the health care service is so difficult, and the health care expenditure is so high”) , the probability of the rural residents becoming the poor when illness was very high, and health care inequality was a serious social problem in China.

- The public health insurance (“The New Cooperative Medical Scheme :NCMS”新农村合作医疗制度) was established in 2003.

Research Question:

Does the NCMS affect the utilization of health care service and out-of-pocket of health care expenditure (医療費の自己負担、医疗费自负) in the rural China?

2. The Reform of Public Health Insurance in Rural China (from CMS to NCMS)

Cooperative Medical System (CMS)

- **Establishment**

  - Cooperative health care clinic was established in Shanxi （山西） province in 1953.

  - In 1956, the establishment of cooperatives was allowed to be perform in the whole rural districts by the National People's Congress.

- **CMS and the people's commune**

  - CMS was promoted with the development of the people's commune, which was the final administration organization of Chinese communist Party in the rural districts after 1959.

  - CMS was a mutual aid and cooperation association. Main financial resources was based on the fee charged by the rural residents and the people's commune (the collective organization).

Note: The registration system (Hukou Zhidu) was enforced after 1958.

Evaluation of CMS

- United Nations stated as " The CMS in China is responsible for primary health care in the rural and enhance the health care quantity, it is one of the paradigm for the developing country." (in Women and Children's Fund Association' s 1980 and 1981 report)

- World Bank and WHO (World Health Organization) also praised that "China has achieved great success by controlling the mortality of infectious diseases. The result was much larger than many other developing countries", " CMS in the rural China is the only paradigm that can solve the health care expenditure problem in developing countries, and it is a successful health care revolution ." (World Bank, 1994).

New Cooperative Medical Scheme (NCMS)

Establishment

- In the 1990s, while the decrease of the participation in CMS , health care expenditure increased greatly and quickly.

- The probability that the rural residents with severe disease become the poor was very high, health care inequality was a serious social problem in China.

- In March 1993, Chinese Ministry of Health proclaimed the universal health insurance planning.

- In January 1997, the State Council published " Decisions about Health Care Reform and Health Care Development", and announced " We will conduct a New Cooperative Medical Scheme (NCMS: 新村合作医疗制度) in the rural, and effort to disseminate the public health insurance in the rural by 2000" .

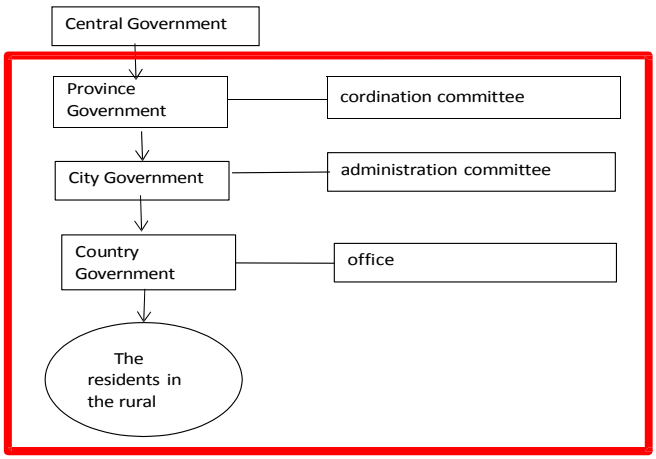
- On January 10, 2003, Ministry of Health, Ministry of Finance and Ministry of Agriculture promulgated the " The Opinions on the Establishment of the New Rural Cooperative Medical Scheme".

- After 2003, local government began to select at least 2-3 districts to perform NCMS as the project model. The successful cases were promoted in the other districts .

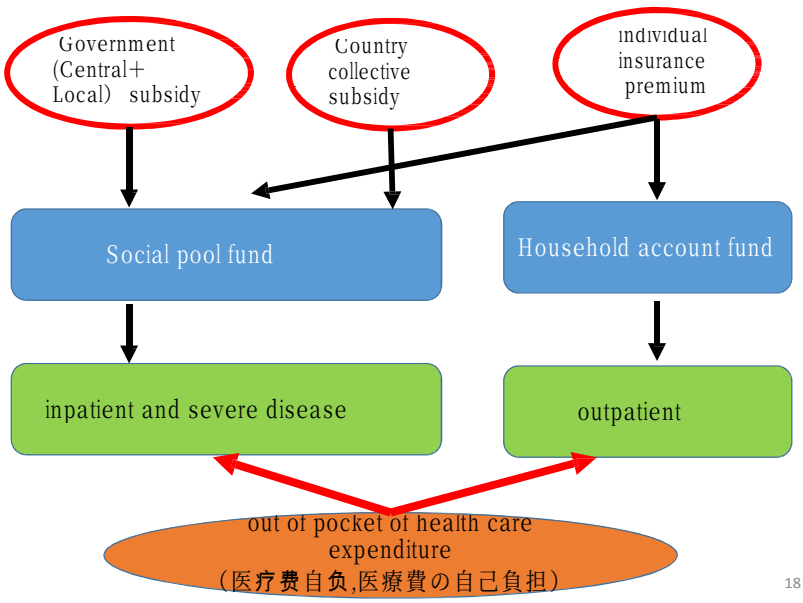
● Management organization

Administration department

Health care facilities



●Fund and Reimbursement



3. Literature Review

1. Empirical studies using cross section data

Wagstaff et al.(2009), Shi et al.(2010), Xiao et al.(2010), You and Kobayashi (2011), Lu et al.(2012) , Li et al. (2014)

2. Empirical studies using panel data

Wagstaff and Lindelow (2008), Lei and Lin(2009), Jing et al. (2013), Cheng et al.(2014)

Features of the study

1. Except of Lei and Lin (2009),Jing et al. (2013), less analysis using DID (Difference in Difference) analysis method.

- Using the quasi- natural experiment case, the effect of the NCMS can be estimated by the DID analysis method.

2. In empirical studies on the utilization of health care services, the Anderson model is used commonly (Anderson 1995; Anderson and Newman 1973).

- Although Lei and Lin (2009) and Jing *et al.*(2013) applied the DID method, they didn't used the Anderson model, so there exist the omitted variable problem in previous studies.

➢DID method based on Anderson model is applied in this study.

4. Methods

The models

Probit regression model (Random effect model)

$$y_{it}^{*} = a_t + \beta_1 NCMS_{it} + \beta_2 X_{it} + u_i + v_{it} \quad (1.1)$$

$$y_{it}^{*} = \begin{cases} 1 & if \quad y_{it}^{*} > 0 \\ 0 & if \quad y_{it}^{*} \le 0 \end{cases} \quad (1.2)$$

$$P(y_{it} = 1) = p_{it} = P(u_i + v_{it} = 1 - a_t - \beta_1 NCMS_{it} - \beta_2 X_{it}) \quad (1.3)$$

Quasi-experiment (DID)

$$y_{it}^{*} = a_t + \gamma_1 Treatment_t + \gamma_2 Year_t + \gamma_3 DID_{it} + \gamma_4 X_{it} + \varepsilon \quad (2)$$

DID is a cross-item of treatment dummy and reform period dummy

	Pre-2003(before)	Post-2003(after)
estimation 1	2000	2004 or 2006
estimation 2	2000	2004
estimation 3	2000	2006

Data： CHNS2000-2006

- CHNS is a panel survey conducted by North Carolina University. The first wave of survey was conducted in 1989. New Cooperative Medical Scheme (NCMS) was performed in 2003, so pre-reform period (wave2000) and post-reform period(wave2004 and wave2006) are used.
- Representative regions are covered in these survey. They are Jiangsu（江苏）, Liaoning（辽宁）, Helongjiang（黑龙江）, Shandong（山东）, Henan（河南）, Hubei（湖北）, Hunan（湖南）, Guangxi（广西） and Guizhou（贵州） provinces (9 regions).
- Based on the resident ledger used in population census, the sample is extracted using a multi-stage random sampling methods.
- Sample sizes are16,150(2000), 9,856(2004), 9,788(2006).

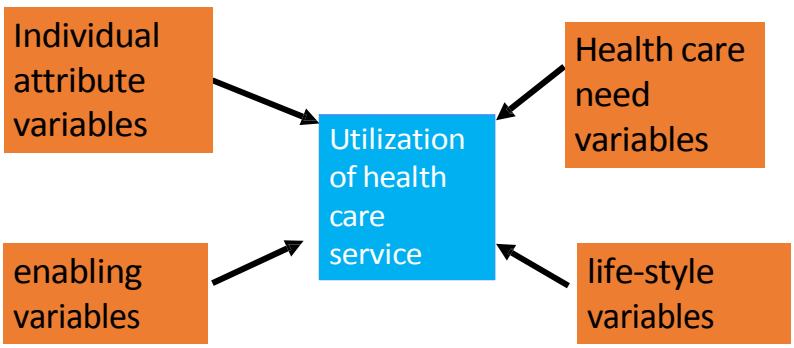
Main Dependent Variables

- Probability of receiving the health care service
  Those who received the health care service within four weeks after illness =1, the others=0
- Out of pocket of health care expenditure (医療費の自己負担、医药费自负)
  Out of pocket of health care expenditure
  =health care expenditure X co-sharing rate
- Probability of disaster health care expenditure
  Rate of health care expenditure to household income per capita is 40 % or more than 40%=1, less than 40%=0
- Probability of receiving physical examination
  Those who received physical examination=1, the others=0

Independent Variables

Anderson's model

(Anderson 1995; Anderson and Newman 1973)



Independent Variables

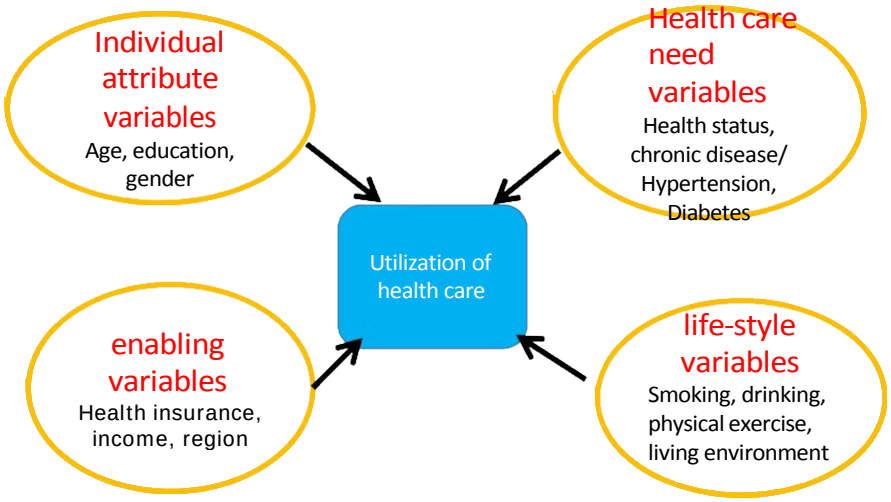


Table 1 Health Insurance Status in Rural China

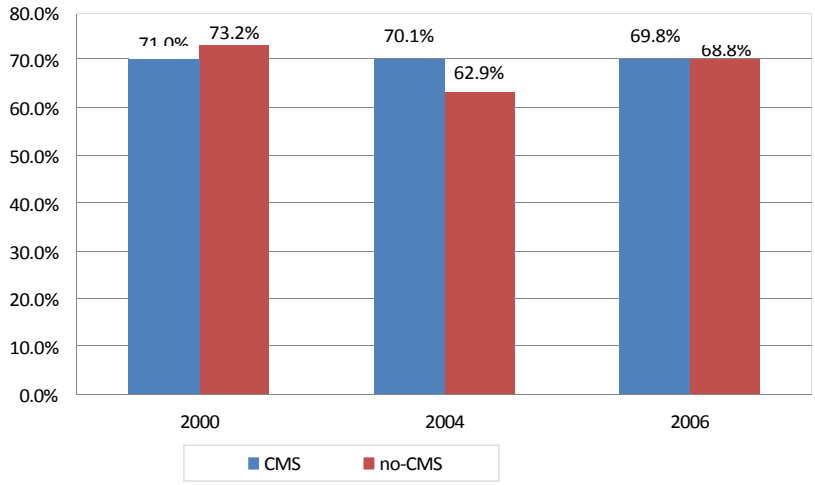
	2000年			2004年			2006年		
	Total	age16-59	+age60	Total	age16-59	+age60	Total	age16-59	+age60
Civil servants medical	4.9%	5.1%	4.3%	0.5%	0.4%	0.8%	0.3%	0.2%	0.5%
BHIS	2.4%	2.5%	2.2%	0.5%	0.5%	0.6%	1.6%	1.6%	1.5%
CMS	4.5%	4.8%	3.5%	11.2%	11.2%	11.2%	43.0%	43.0%	43.1%
Private Health Insurance	1.8%	1.8%	1.8%	0.9%	1.1%	0.2%	0.7%	0.9%	0.1%
Family health Insurance	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Unification Insurance	0.5%	0.5%	0.3%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%
The Others	1.9%	2.0%	1.8%	0.1%	0.1%	0.0%	0.3%	0.3%	0.3%
no-enrollment	83.9%	83.2%	86.0%	86.6%	86.4%	87.0%	54.1%	54.0%	54.5%

Sourse：caculated based on CHNS2000-2006.

Notes: BHIS: Basic Health Insurance Scheme for urban employmees

CMS: Cooperative Medical Scheme for rural residents.

Figure 2 The Proportion of Groups Who Received Health Care Service When Illness



Sourse：CHNS2000-2006.

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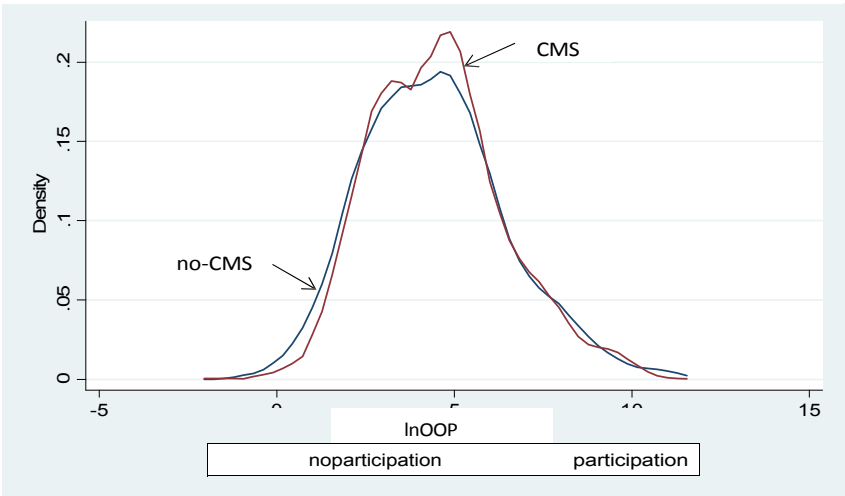
Figure 3 Kernel Density Distribution of Out of Pocket of Health Care Expenditure



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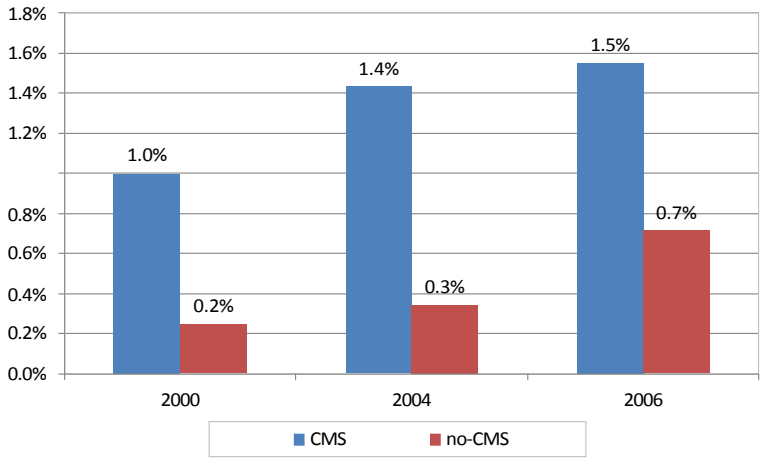
Sourse：CHNS2000-2006.

Figure 4 The Proportion of Groups Who Received Physical Examination



Sourse：CHNS2000-2006.

5. Results

Table 2 The Effect of NCMS in Rural China (1)

	2000vs.2004		2000vs.2006	
	margin effect	z-value	margin effect	z-value
(1)Access to health care serveice (outpatient and inpatient)				
Treatment	0.0420 **	2.42	0.0034	0.32
Year	0.0581 ***	8.35	0.0533 ***	6.15
DID	-0.0068	-0.41	0.0191	1.45
(2)Access to health care serveice (outpatient)				
Treatment	0.0380 **	2.25	0.0057	0.56
Year	0.0546 ***	8.10	0.0514 ***	6.15
DID	-0.0038	-0.23	0.0158	1.26
(3)Access to health care serveice (inpatient)				
Treatment	0.0020	0.71	-0.0015	-0.71
Year	0.0021 *	1.75	0.0012	0.68
DID	-0.0017	-0.84	0.0020	0.68

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Table 2 The Effect of NCMS in Rural China (2)

	2000vs.2004		2000vs.2006	
	margin effect	z-value	margin effect	z-value
(4) OOP of Health Expenditure				
Treatment	0.1794	0.35	-0.3708	-1.00
Year	-0.2820	-1.09	-0.6917 **	-2.12
DID	-0.8014	-1.42	0.1397	0.32
(5) Total Health Care Expenditure				
Treatment	-0.2570	-0.54	-0.4107	-1.24
Year	-0.2544	-1.10	-0.6899 **	-2.52
DID	-0.5156	-1.07	0.1347	0.37
(6) Disaster health care expenditure				
Treatment	-0.0373	-0.32	-0.0798	-0.80
Year	-0.2341 ***	-2.94	-0.4285 ***	-3.66
DID	-0.1340	-1.41	0.0537	0.45
(7) Physical examination				
Treatment	-0.0008	-0.40	-0.0036	-1.36
Year	0.0011	0.89	0.0018 **	1.23
DID	0.0071	1.25	0.0167 ***	2.68

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Main findings of table 2

1. In the results of ①probability of access to health care facilities, ②probability of outpatient, ③probability of inpatient, ④the total health care expenditure, ⑤out of pocket expenditure(OOP), ⑥probability to become the disaster health care expenditure, the estimated coefficient of DID term is not statistically significant.

NCMS hasn't significant effect on the reduction of OOP and the probability to become the poor if illness. It also hasn't much more helpful to increase the probability of access to health care facilities.

Table 3 The Effect of NCMS in Rural China by Age Groups (1)

	+age60		age16-59	
	margin effect 2000vs. 2004	z-value	margin effect	z-value
(1)Access to health care serveice (outpatient and inpatient)				
Treatment	0.0128	0.19	0.0441 **	2.52
Year	0.1016 ***	4.33	0.0498 ***	6.96
DID	0.0515	0.65	-0.0112	-0.69
(2)Access to health care serveice (outpatient)				
Treatment	0.0162	0.25	0.0367 **	2.20
Year	0.0925 ***	4.07	0.0477 ***	6.97
DID	0.0391	0.53	-0.0039	-0.24
(3) OOP of Health Expenditure				
Treatment	-0.5169	-0.31	0.3867	0.69
Year	0.1272	0.18	-0.3180	-1.08
DID	1.0163	0.58	-1.1695 *	-1.66
(4) Total Health Care Expenditure				
Treatment	-0.7749	-0.51	-0.2830	-0.55
Year	0.3780	0.60	-0.3488	-1.35
DID	0.2509	0.16	-0.5689	-1.02
(5) Physical examination				
Treatment	-3.00E-05	-0.01	-0.0006	-0.26
Year	-3.27E-08	-0.22	0.0004	0.37
DID	0.7627	0.01	0.0042	0.88

- In working group (16-59age), compared to the no-NCMS group , OOP of health care expenditure 117% point lower for NCMS group.
- On the other hand, in the elderly group (age60+), the estimated coefficient of DID term is not statistically significant.

Table 3 The Effect of NCMS in Rural China by Age Groups (2)

	+age60		age16-59	
	margin effect	z-value	margin effect	z-value
	2000年 vs. 2006年			
(1)Access to health care serveice (outpatient and inpatient)				
Treatment	0.0034	0.10	0.0034	0.34
Year	0.0942 ***	4.81	0.0362 ***	4.15
DID	0.0166	0.46	0.0213 *	1.62
(2)Access to health care serveice (outpatient)				
Treatment	0.0018	0.06	0.0059	0.61
Year	0.0856 ***	4.59	0.0357 ***	4.25
DID	0.0174	0.50	0.0168	1.34
(3) OOP of Health Expenditure				
Treatment	0.2555	0.22	-0.5772	-1.35
Year	-0.6042	-0.75	-0.7883 **	-2.00
DID	-0.4570	-0.37	0.4386	0.84
(4) Total Health Care Expenditure				
Treatment	0.5454	0.57	-0.5731	-1.49
Year	-0.3345	-0.57	-0.8128 **	-2.42
DID	-0.6598	-0.67	0.1620	0.36
(5) Disaster health care expenditure				
Treatment	-0.0026	-0.02	-0.1789	-1.60
Year	-0.3841	-1.19	-0.3581 ***	-2.74
DID	0.0782	0.38	0.0534	0.38
(6) Physical examination				
Treatment	-0.0547	-0.01	-0.0023	-1.03
Year	0.0007 **	2.18	0.0001	0.09
DID	0.4407	0.01	0.0166 ***	2.68

- In working group(16-59 age), compared to the no-NCMS group , the probability to receive physical examination is 116 percentage point higher for NCMS group.
- On the other hand, in the elderly group (age60+), the differentials of the probability to receive physical examination between NCMS group and no-NCMS group is not statistically significant.

Other findings of table 3

- Either in working group(age16-59) ,nor in the elderly group(age60+), the effect of NCNS on ①the probability of outpatient and inpatient, ②the total health care expenditure, ③the probability to become the poor if illness are not confirmed.

6. Conclusions

Main Findings (1)

- On the whole, NCMS hasn't significant effect on the reduction of OOP and the probability to become the poor if illness. It also hasn't much more helpful to increase the probability of access to health care service.

- In working group (age16-59), compared to the no-NCMS group , OOP of health care expenditure 117% point lower for NCMS group. On the other hand, in the elderly group (age60+), the estimated coefficient of DID term is not statistically significant.

6. Conclusions

Main Findings (2)

- In working group(16-59 age), compared to the no-NCMS , the probability to receive physical examination is 116 percentage point higher for NCMS group. On the other hand, in the elderly group (age60+), the differentials of the probability to receive physical examination between NCMS group and no-NCMS group is not statistically significant.

- Either in working group(16-59 age) ,nor in the elderly group (age60+), the effect of NCMS on the probability of outpatient and inpatient, the total health care expenditure, the probability to become the poor if illness are not confirmed.

Policy Implication

- To reform the NCMS → to increase the imbursement of NCMS and decrease the OOP rate
- To enact special public health insurance system for the elderly (e.g. Japan, U. S.) → to establish new social security system in population aging China
- To establish the public health care assistance system for the group with severe disease in order to deal with the poverty problem in health care. →While establish the new public health insurance (NCMS), to promote the consolidation with other social security system (e.g. anti-poverty policy) is necessary.

Thank you very much for kind attention

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