

A Study on the Effectiveness of Child Care Policy in Korea

December 2013 | Haywon Lee

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Contents ■ ■ ■

I . Introduction	9
II . Main Contents of Child Care Policy	12
1. Main Contents and Budget of Child Care Policy	12
A. Child Care Policy	12
B. Child Care Budget	18
2. Status of Child Care	22
A. Status of Child Care Institutions and Client Children	22
B. Costs for Using Child Care Services	25
3. Major Issues Regarding Child Care Policy	27
A. Undifferentiated Methods of Support	27
B. Excessive Use of Child Care Institutions by Infants	28
C. Insignificant Effect Felt from the Relieved Burden of Child Care Costs ..	31
D. Difficulties in Ensuring the Quality of Child Care Services	32
III. Child Care Policy and Female Labor Participation	38
1. Materials	39
2. Labor Supply by Women with Infants	40
3. Empirical Analysis	44
4. Sub-conclusion and Policy Implications	53

IV. Child Care Policies and Fertility Rates	56
1. Dataset	57
2. Comparison of Basic Statistics according to the Existence of a Plan for Additional Children	59
3. Empirical Analysis	62
4. Sub-conclusion and Policy Implications	66
V. Conclusion	70
References	76
Abstract	77

List of Tables

<Table II-1>	Recipients and Levels of Child Care Cost Subsidy (2013)	13
<Table II-2>	Recipients of Full Support for Child Care Costs (1999-2013)	14
<Table II-3>	Number of Children Supported with Child Care Costs (2008-2012)	15
<Table II-4>	Changes in the Scope of Recipients and the Subsidy Amounts of the Child Home Care Allowance	16
<Table II-5>	Number of Children Supported with Child Care Costs (2008-2012)	16
<Table II-6>	Central Government Child Care Budget (2013)	19
<Table II-7>	Status of Child Care Centers and Number of Children (2012)	23
<Table II-8>	Infants and Toddlers Using Child Care Institutions (2012)	23
<Table III-1>	Changes in Female Employment Status from the 1st to 3rd PSKC	42
<Table III-2>	Reasons for Withdrawing from the Labor Market by Time of the Decision	44
<Table III-3>	Composition of Empirical Analysis Sample	46
<Table III-4>	Basic Statistics of Sample	47
<Table III-5>	Comparison of Basic Statistics between the 1st and 3rd Rounds of PSKC by Employment Transition	48
<Table III-6>	Factors Affecting Female Workers' Withdrawal from the Labor Market (Withdrawal from the labor market = 1)	51
<Table III-7>	Effects of Child Care Support Policies on Female Withdrawal from the Labor Market	52
<Table III-8>	Estimation of Marginal Effects in Model 5	52
<Table IV-1>	Comparison of the Basic Statistics according to the Existence of a Plan for Additional Children among Households with One Child	61
<Table IV-2>	Factors Affecting the Intention for Another Child among Households with One Child	65

List of Figures



[Figure II-1]	Budget for Early Childhood Care and Education (2005-2013)	21
[Figure II-2]	Infant and Toddler Usage Rate of Institutions (child care centers and kindergartens)	24
[Figure II-3]	Average Monthly Child Care and Education Costs per Infant or Toddler (2009, 2012)	26
[Figure II-4]	Relationship between Employment Rate of Mothers of Infants and Infant Usage Rate of Child Care Institutions in Major OECD Countries	30
[Figure II-5]	Degree of Perceived Burden of Child Care Costs	31
[Figure III-1]	Change in Female Employment Status Revealed by the PSKC	41
[Figure IV-1]	Intention to Have Additional Children by Number of Children	59



I

Introduction

Since the 2000s, the Korean government has substantially increased its investments in preschool-aged children. The central government child care budget increased from 0.4 trillion won in 2004 to reach 1 trillion won in 2007 for the first time, and stood approximately at 4.1 trillion won this year. Including local expenditures, a total government budget of 8.4 trillion won was allocated to child care programs in 2013. The figure is estimated to reach into the 9 trillion won range if a variety of child care support policies executed by local governments under the name of a special child care policy are included. This dramatic increase in government investment in child care over the past decade can be viewed both as an effort to respond to the plunge in the national birthrate to the lowest in the world and as a commitment to expanding the growth potential of the nation by enabling women to participate in economic activities while managing a balance between work and home.

This expansion of government responsibility and increase in support for the care of infants and toddlers is desirable progress unto itself. This is because while the primary goal of child care policy is to foster the healthy development of children, it also has two other important effects: supporting the national birthrate and encouraging women to participate in economic activities through the availability of quality child care service. However, the focus on quantitative expansion of child care infrastructure in a society where such infrastructure has yet to qualitatively mature is giving rise to a number of problems. While the majority of the child care budget is allocated to meeting the child care demand at hand, the investment required to ensure quality child care infrastructure,

management and supervision from a long-term perspective is not receiving due attention. This is why the satisfaction of parents, the recipients of such service, has not significantly improved despite increases in government support for child care costs. In addition, over the course of indiscriminately expanding the scope of the targets of the policy and the support amount without due consideration of the method of securing the necessary financial resources, the fiscal burden on local governments has grown heavier and the conflict between the central and local governments over the allotment of financial resources has been aggravated. This raises a persistent doubt regarding the sustain ability of child care policy.

The financial support provided for infant and toddler care has rapidly increased due to the tendency toward populism on the part of politicians, while there has been inadequate consideration of the fundamental goals of the financial support and a paucity of serious discussion on policy design needed to achieve the intended effects. The cost-effectiveness of any program with budget of this scale must be considered before it is executed. However, the free child care policy has been pursued abruptly without allowing time for an appropriate examination of the policy, resulting in the problems described above. There has been simply a naive expectation that a drastic increase in the financial support for child care will lead both to a higher birthrate and greater female participation in economic activities, while no serious efforts have been made to set a direction for achieving the concrete effects desired from the policy. For example, the policy of providing an equal child care subsidy to all infants and toddlers irrespective of their family's income or their mother's employment status, as well as the expansion of the recipients of the child care allowance initially limited to vulnerable families to everyone with infant children, can hardly be considered the most efficient policy tools for raising the birthrate and encouraging female participation in the workplace. Despite the fact that support could first have been offered in a phased or selective manner in consideration of the effectiveness of the policy and its fiscal soundness, under the name of universality of recipients the government has opted for the most expensive policy option and now seems to be paying the resultant political and economic costs.

It is too early to assess the effectiveness of the free child care policy, since less than a year has passed since the full implementation of the policy.

In particular, since unlike with some other family matters, the decision to have a baby it is difficult to shift with policy variables over a short period of time. Therefore, any impact of child care policy on an increase in the birthrate can only be properly evaluated after a certain period of time has elapsed since its implementation. As such, while a comprehensive evaluation of child care policy will eventually be made from longer-term perspective, it is currently necessary to closely examine whether the current policy is moving toward the best direction to achieve the policy goals set by the government. As infant and toddler care is a program requiring a sizable annual budget, the direction of relevant policy should be adjusted in order to minimize waste while maximizing policy effectiveness.

In consequence, this paper will analyze whether the current child care policy has been designed in such a way as to achieve the effects expected from the financial support, and then suggest future policy guidelines. There must be clear policy direction if the multi-dimensional goals of a child care policy, including healthier development of children, higher birthrate and greater female labor participation, are to be achieved. Simply expanding the scope of recipients and allocating additional budget without properly envisioning the policy effect is highly likely to result in inefficient use of time and resources.

This paper is composed as follows: In Chapter II, the main contents of child care policy and the status of child care are presented while the main issues surrounding the policy are examined. In Chapter III and IV, the effect of child care policy on improving female labor participation and the national birthrate will be analyzed. In Chapter V, a summary of the findings of this study will be presented and policy implications will be discussed.

II

Main Contents of Child Care Policy

1 Main Contents and Budget of Child Care Policy

A. Child Care Policy

1) Supporting Child Care Costs

In terms of the eligible recipients, infant and toddler care costs subsidized by this policy can be classified into those for zero-to-five year olds, children with disabilities, after school activities and extended child care services (<Table II-1>).

A subsidy policy for infant and toddler care costs was introduced in 1999 and focused on households in the legally-defined and other low income brackets until 2003. Starting in 2004, those earning 120 to 150 percent of the minimum designated cost of living were added, resulting in a three-tiered differential support policy for infant and toddler care costs. In 2005, the criteria for determining support was changed from the minimum cost of living to the average monthly income of urban workers' households, and the income brackets were expanded from three to four tiers, further broadening the scope of recipients. In July 2009, the criteria for infant and toddler care cost support were shifted from low income classes as determined by the monthly average income of urban workers' households to income quintiles for all households with infants and toddlers, establishing a foundation for universal support for child care costs.

Furthermore, the number of income brackets receiving support was eventually reduced from five to three, and the households eligible for full child care cost support were expanded from the next-needy to the lower 50 percent of income brackets, remarkably increasing the pool of recipients.

Starting in 2011, infant care costs were fully subsidized based on the unit price of government support for the lower 70 percent of income households

〈Table II-1〉 Recipients and Levels of Child Care Cost Subsidy (2013)

Classification	Recipients	Support Amount
Child care cost for 0–5–year – olds	Universal (irrespective of income and asset level)	0–year – olds: KRW 755,000 per month – Child care costs paid to parents KRW 394,000 + basic child care costs KRW 361,000 1–year – olds: KRW 521,000 per month – Child care costs paid to parents KRW 347,000 + basic child care costs KRW 174,000 2–year – olds: KRW 401,000 per month – Child care costs paid to parents KRW 286,000 + basic child care costs KRW 115,000 3–5–year – olds: KRW 220,000 per month
Free child care benefit for children with disabilities	Preschoolers not older than 5 years (preschoolers not older than 12 years) Children with disabilities (irrespective of income and asset level)	If the children – to – teacher ratio is 1:3 and teachers dedicated to child care for disabled children are allocated: KRW 394,000 per month. Others: unit price of government support by age
Child care costs for children from multicultural families	Not older than 5 years Children from multicultural family (irrespective of income and asset level)	Unit price of government support by age
Child care costs for afterschool activities	Children from next–needy classes or below and those with disabilities	Children without disabilities: KRW 100,000 per month Children with disabilities: 50% of child care costs for children with disabilities (KRW 197,000 per month)
Costs for after–hours care	Children from next–needy classes or below and those with disabilities	Children without disabilities: KRW 2,700 per hour Children with disabilities: KRW 3,700 per hour

Source: Based on Ministry of Health and Welfare, 2013 *Child Care Programs*.

with infants and toddlers and, in 2012, full support was extended to all zero-to-two year old infants. In addition, the *Nuri* Curriculum has been in implementation since 2012 as an effort to support child care and education costs for all five-year-old children. The *Nuri* Curriculum incorporates a kindergarten curriculum into the National Standard Edu care Curriculum in order to foster the basic skills and abilities needed in early childhood with an aim of reinforcing the responsibility of the state for child care and education. Upon the inclusion of three-to-four-year-olds into the *Nuri* Curriculum in 2013, the era of free child care for zero-to-five-year-olds had arrived. As of 2013, the monthly unit price of government support for child care costs is 755,000 won for zero-year-olds, 521,000 won for one-year-olds, 401,000 won for two-year-olds and 220,000 won for those three to five years of age. <Table II-2> shows the changes in the scope of fully supported recipients, along with the unit price of government support for zero-to-five-year-olds from 1999 to 2013.

<Table II-2> Recipients of Full Support for Child Care Costs (1999-2013)

Year	0-2-year-olds	3-4-year-olds	5-year-olds
1999	Legally defined low income bracket		Legally defined low income bracket + Other low income brackets
2000			Earning not more than 80% of the average monthly income of urban working household
2004			
2005			
2006	Legal low income bracket + next - needy		Average monthly income of urban working households 90% (urban), 100% (rural)
2007			Earning not more than 100% of the average monthly income of urban working households
2009	Infants and toddlers from the lower 50% of income brackets		Infants and toddlers from the lower 70% of income brackets
2011	Infants and toddlers from the lower 70% of income brackets		
2012	All classes	Infants and toddlers from the lower 70% of the incomes bracket	All classes (<i>Nuri</i> Curriculum introduced)
Since 2013	All classes		

Source: Adapted from annual *Child Care Programs*, Ministry of Health and Welfare.

〈Table II-3〉 Number of Children Supported with Child Care Costs (2008-2012)

(Unit: number of people)

Year	Total number of children qualifying for child care cost support	0 – 4 – year – olds	5 – year – olds	Children with disabilities	Two or more children	Multi cultural
2008	716,400	592,256	–	15,644	108,500	–
2009	794,755	671,721	107,951	15,083	(60,704)	–
2010	878,880	760,110	103,882	14,938	(142,210)	–
2011	991,310	851,362	99,334	14,405	–	26,209
2012	1,321,000	1,129,982	142,772	13,022	–	35,224

Note: Children benefiting from child care cost support for families with two or more children are excluded from the total because they are also beneficiaries of differential child care cost support.
Source: Ministry of Health and Welfare, annual *Statistics on Child care*.

2) Child Care Allowance

Introduced in July 2009, the child home care allowance was designed as a replacement child care service allowance paid to children who do not use a child care center or kindergarten. A monthly child care allowance of 100,000 won was paid to next-needy families with children younger than 24 months old at the time of its introduction. In 2011, it was expanded to allow 100,000 to 200,000 won per month to be paid to those with younger than 36-month-old children. Since March 2013, the scope of recipients has been extended to all groups regardless of income or assets, and the age of eligible children was increased from those younger than 36 months to those younger than 84 months. The amount of monthly subsidy is currently 200,000 won for zero-year-olds, 150,000 won for one-year-olds and 100,000 won for two-to-five-year-olds. As of April 2013, 28 percent of all infants and toddlers are benefitting from the child care allowance and approximately 87 percent of these beneficiaries are zero-to-two year old infants.¹⁾

1) Ministry of Health and Welfare, *Status of Infant and Toddler Childcare Support*, press release, 22 March, 2013.

<Table II-4> Changes in the Scope of Recipients and the Subsidy Amounts of the Child Home Care Allowance

Year	Income criteria	Age	Subsidy amount
2009 – 2010	Next – needy bracketor below	0 – 1 year	KRW 100,000 per month
2011 – 2012	Next – needy bracketor below	0 – 2 years	0 year: KRW 200,000 per month 1 year: KRW 150,000 per month 2 years: KRW 100,000 per month
2013	All classes	0 – 5 years	0 year: KRW 200,000 per month 1 year: KRW 150,000 per month 2–5 years: KRW 100,000 per month

Source: Based on Ministry of Health and Welfare, annual *Child Care Programs*.

<Table II-5> Number of Children Supported with Child Care Costs (2008-2012)

(Unit: number of people, %)

Year	0 year	1 year	2 years	Total
2010	22,870 (5.21)	26,978 (6.13)	–	49,848 (5.74)
2011	36,621 (8.47)	38,408 (8.83)	14,610 (3.33)	89,639 (6.86)
2012	35,514 (7.65)	40,997 (8.68)	16,307 (3.46)	92,818 (6.59)

Note: Figures in parentheses represent percentage of the total number of children.
Source: Ministry of Health and Welfare, annual *Statistics on Childcare*.

3) Support for Facilities

Subsidies offered to child care facilities can be divided between support for personnel expenses and for respective programs. Eligible recipients of support for personnel expenses are those institutions whose construction costs were supported by the government, such as public and corporate child care centers. The amount of support for personnel expenses is as follows: 80 percent of personnel expenses for the head of the center, 80 percent for infant class teachers, 30 percent for toddler class teachers and 50 percent for after-school teachers (Ministry of Health and Welfare, 2013). Furthermore, the personnel expenses for an additional child care teacher and an additional kitchen worker are fully

supported for child care centers in disadvantaged areas such as districts surrounding abandoned mines, rural islands and otherwise isolated areas. In addition, those facilities in small-to-medium and metropolitan cities offering child care with certified quality have been supported with personnel expenses for kitchen workers since 2009.

Support for respective programs covers programs for infants, children with disabilities, prolonged care, 24-hour care, holiday care and after-school care. The amount of support varies according to the type of facility. In addition, 500,000 to 1,200,000 won per year is provided for textbooks and materials at private general child care centers that have been evaluated and certified. The cost for textbooks and materials has been supported at private child care centers since 1998 and for workplace child care since 2006. In addition, a 200,000 won per month subsidy is provided for vehicle operating expenses for facilities in rural areas (Ministry of Health and Welfare, 2013).

Operating expense support for private or at-home child care centers is offered in the forms of basic subsidies and subsidies for operating public-type child care centers. The government provide sapredetermined amount of support by age as basic child care costs for all infants attending a private child care center. Although the basic subsidy bears the nature of a parental subsidy in that it is offered for each infant, it is received by the relevant facility instead of directly by the parents, and consequently corresponds to support for personnel expenses at public child care centers. It thus tends to be strongly perceived as a subsidy for facilities (Seo Mun-hui and Hye-jin Kim, 2012).

Introduced in the second half of 2011, public-type child care centers are private child care centers where the quality of care services is second only to their public counterparts, and whose operating expenses are supported by the government in order to allow stable operation and high-quality management. As of 2013, subsidies for operating expenses are divided between ten categories, depending on the quota of the relevant child care center, with amounts ranging from 1,160,000 won to 8,750,000 won per month (Ministry of Health and Welfare, 2013).²⁾ As of December 2012, a total of 778 facilities had been selected

2) Specifically, monthly subsidies are offered as follows: 1,160,000 won for 20 children or fewer 2,530,000

as a public-type child care center. As a local government, Seoul Metropolitan City supported the personnel expenses of private child care centers before such support was offered to public-type child care centers. The Seoul Metropolitan Government grants a certification of ‘Seoul-style Child Care Center’ to those child care centers whose care environment and services meet a certain recommended level, regardless of the type of establishment, and offers them support equivalent to that given to their public counterparts.

B. Child Care Budget

The budget for child care programs has been rapidly increased over the past ten years. Having stood at a mere 400 billion won in 2004, the combined child care budgets of the central and local governments showed a dramatic annual increase to exceed 1 trillion won in 2006, reached 4.2889 trillion won in 2010 and then surpassed 6.1322 trillion won in 2012. In 2013, the child care budget of the central government alone stood at 4.1313 trillion won, a 36.4 percent increase over the previous year (<Table II-6>). When including the corresponding local expenditures, the total business expenses for child care programs are expected to reach approximately 8.3418 billion won for 2013 (Seo Mun-hui and Hye-jin Kim, 2012).

Support for infant and toddler care costs makes up the greatest share, with approximately 2.6 trillion won, or 63 percent of the total central government child care budget for 2013 (<Table II-6>).³⁾ The budget for supporting infant and toddler care costs showed a sharp year-on-year increase of 24 percent in 2012 when support for zero-to-two-year-olds was first introduced for all income classes. Although 2013 saw an expansion of child care cost support for three-to-four-year-olds from the lower 70 percent of income brackets to all

for 21–35 children; 2,680,000 for 36–49 children; 4,450,000 won for 50–62 children; 4,600,000 won for 63–76 children; 5,650,000 won for 77–86 children; 5,800,000 won for 87–97 children; 8,290,000 won for 98–111 children; 8,440,000 won for 112–123 children; and 8,750,000 won for 124 or more children (Ministry of Health and Welfare, 2013).

3) For *Nuri* Curriculum budget for 5–year-olds, approximately 456 billion won is separately provided from the local education financial subsidy.

〈Table II-6〉 Central Government Child Care Budget (2013)

(Unit: million won, %)

Classification	Content	Budget	Year-on-year increase (%)
	Total	4,131,345	36.4
Support for operation of child care centers	Personnel expenses of employees	444,463	5.0
Support for child care costs	0-5-year-olds of all groups: 1,115,000 children Free child care benefit for children with disabilities: 14,000 children Costs for after-hours care: 53,000 children	2,598,219	8.7
Reinforcement of the functions of child care centers	Building 75 new public child care centers Remodeling 19 collective housing child care centers Building 2 centers dedicated to children with disabilities Purchasing equipment and materials for 30 centers Supporting environment improvement costs at 350 centers	23,610	99.0
Construction of child care infrastructure	Managing child care programs Providing comprehensive child care support services Supporting training of child care center teachers Research and development of child care programs Operating e-vouchers for child care	24,990	62.5
Evaluation and certification of child care centers	Operating child care evaluation and certification and supporting staff	6,668	10.7
Support for facilities offered to child care centers	Costs for textbooks and materials, vehicle operating expenses and costs for improving teachers' working environment for corporate child care centers in rural areas, and for public-type child care centers	150,445	92.4
Child care allowance	0-5 year olds of all groups: 1,193,000 children	880,950	758.2

Source: Ministry of Health and Welfare, *2013 Child Care Programs*, 2013, p. 173.

classes, the budget for supporting child care costs increased by a mere 8.7 percent year-on-year since a local education financial subsidy was tapped as a financial resource.⁴⁾ Following infant and toddler care support, the child care allowance makes up the second largest share, with a total of 881 billion won or approximately 21 percent of the child care budget allocated as of 2013. Paid to next-needy families with zero-to-two-year-old children until 2012, the child care allowance has been extended this year to families across all income classes with children not younger than five years not attending a child care center. With this wholesale expansion of the scope of recipients, the budget for the child care allowance increased dramatically by 758 percent over the last year.⁵⁾ In addition, an approximately 440 billion won budget has been allocated for personnel expenses at child care centers, and approximately 150 billion won is to be provided for supporting child care centers with costs such as for textbooks and materials, vehicle operating expenses and costs for improving the working environment for teachers.

In the overall child care budget, items for reinforcing the functions of child care centers, constructing child care infrastructure and child care evaluation and certification are all directly related to improving the quality of child care. The budget for reinforcing the functions of child care centers has doubled over last year as the number of newly built public centers increased from ten in 2012 to 75 in 2013. The budget for erecting child care infrastructure is approximately 25 billion won, a 62.5 percent increase over the last year but still representing less than 1 percent of the total child care budget. To summarize, 95 percent of the child care budget is being allocated to meeting the immediate demand for child care, such child care cost support, child care allowances and personnel expenses at child care centers, while investment being made for improving the quality of child care services from a long-term perspective is

4) Considering fiscal conditions, child care costs and early childhood education fees required for the implementation of the *Nuri* Curriculum for three-to-four-year-olds is planned to be financed by the national treasury, local expenditures and local education financial subsidies by 2014. Afterwards, local education financial subsidies will serve as the sole financial resource from 2015.

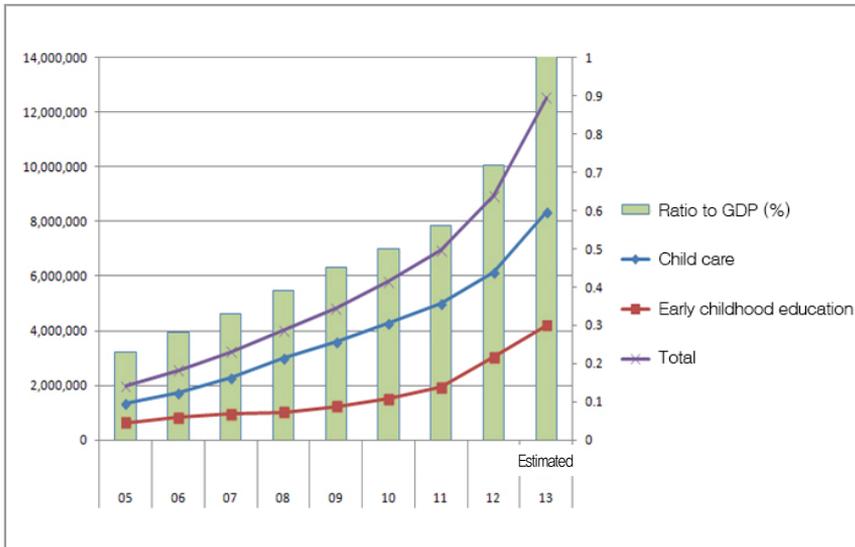
5) For 2013 budgeting purposes, the number of applicants for the child care allowance is estimated to be approximately 120,000 persons.

minimal.

Meanwhile, the early childhood education budget allocated in the form of a local education finance subsidy was approximately 4.2 trillion won in 2013, and the combined early childhood care and education budget allocated for infants and toddlers marked approximately 12.54 trillion won as of 2013. The budget for child care and early childhood education as a percentage of GDP increased from 0.2 percent in 2005 to 0.7 percent in 2012, and is expected to reach approximately 1.01 percent in 2013, meeting the OECD recommendation of 1 percent ([Figure II-1]).

[Figure II-1] Budget for Early Childhood Care and Education (2005-2013)

(Unit: million won, %)



Note: The child care budget is a program budget subsidized by the national treasury (government expenditures + local expenditures) and does not include the separate program budget of local governments.

Source: Adapted from annual *Child Care Budget* (Ministry of Health and Welfare), as cited in Jang Myeong-lim, *et al.* (2012), p. 21.

2 Status of Child Care

A. Status of Child Care Institutions and Client Children

As of December 2012, the total number of child care centers in operation in South Korea totaled 42,527. By type, the number of in-home child care centers was 22,935, or 54 percent, and that of private centers was 14,440, or 34 percent of the total. Meanwhile, public and private child care centers represented approximately 5 percent and 1 percent, respectively, of the total. Unlike in advanced countries where public or private non-profit facilities represent the majority of child care service providers, child care services in Korea are notable for the fact that approximately 90 percent of them are provided by private profit-seeking facilities.

As of the end of 2012, the number of children aged zero to five who used child care centers stood approximately at 1,490,000. By type of establishment, the number of infants and toddlers attending private child care centers was highest, at slightly more than 50 percent of the total, followed by those attending home child care centers, with 25 percent, and public child care centers, with approximately 10 percent (<Table II-7>). While the ratio of children using private and public child care centers was relatively high in comparison with the overall number of such centers, that of children using in-home child care centers appeared relatively low. This is attributable to the difference between the size of in-home child care centers and other types of establishment.⁶⁾

In terms of age, the usage rate of child care centers by up to two-year-olds rises steadily with age. When the available facilities become split between child care center and kindergartens for three-year-old or older children, the usage rate of kindergartens exceeds that of child care centers from the time when children are four years old. The proportion of children to the population using

6) The average number of attendees at a child care center is 50 or more for corporate, public or private centers, while in-home child care centers are operated on a small scale, with an average number of attendees of 16.2.

<Table II-7> Status of Child Care Centers and Number of Children (2012)

(Unit: number of centers, number of children, %)

		Total	Public	Social welfare corporations	Corporations etc.	Private	Family	Parents' Cooperative	Work-place
Child care centers	Number of centers	42,527	2,203	1,444	869	14,440	22,935	113	523
	Proportion	100.0	5.2	3.4	2.0	34.0	53.9	0.3	1.2
Children cared for	Current number	1,487,361	149,677	113,049	51,914	768,256	371,671	2,913	29,881
	Proportion	100.0	10.1	7.6	3.5	51.7	25.0	0.2	2.0
	Quota	1,721,917	162,926	140,839	52,575	904,956	408,727	3,490	38,404
	Proportion	100.0	9.5	8.2	3.6	52.6	23.7	0.2	2.2
	Usage rate	86.4	91.8	80.3	83.0	84.9	90.9	83.5	77.8
Number of children per center		35.0	67.9	78.3	59.7	53.2	16.2	25.8	57.1

Note: The number of children is based on current number (full day, nighttime, 24-hour, holiday and part-time), and the usage rate is the ratio current number to capacity.

Source: 2012 Statistics on Child care.

<Table II-8> Infants and Toddlers Using Child Care Institutions (2012)

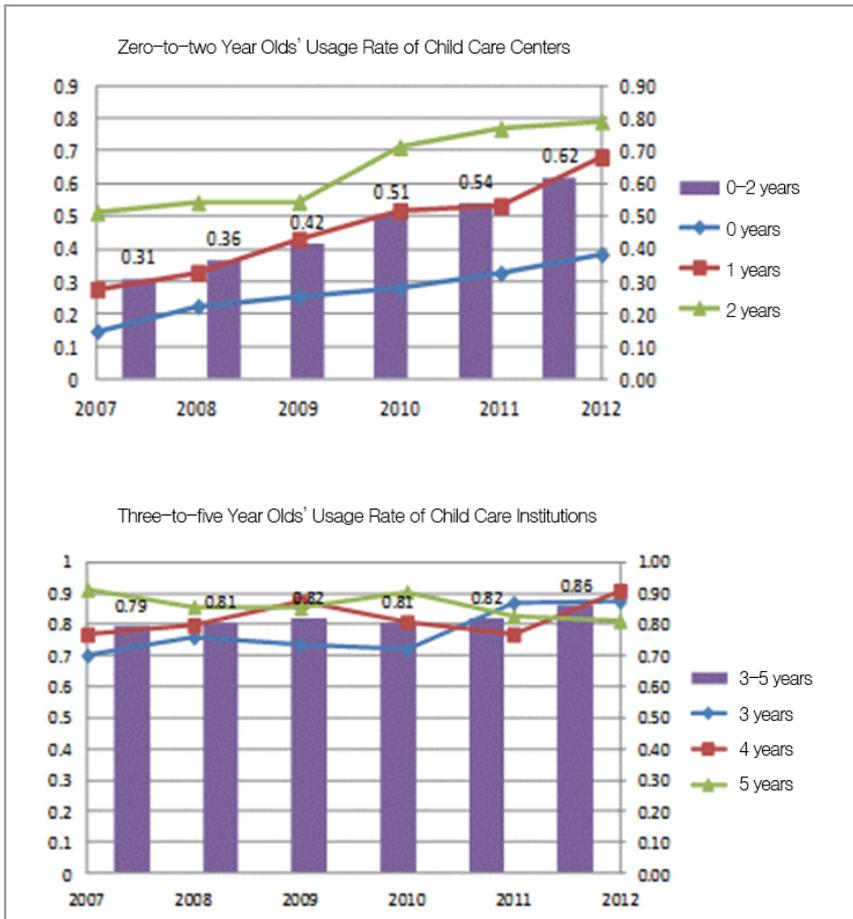
(Unit: number of people, %)

Age	Population of infants and toddlers (A)	Using child care centers (B)	Using kindergartens (C)	Total (B+C)	Proportion of children using child care centers (B/A)	Proportion of children using child care centers and kindergartens (B+C)/A
0 year	464,374	177,757	—	—	38.3	—
1 year	472,275	321,716	—	—	68.1	—
2 years	470,956	372,811	—	—	79.2	—
0-2 years	1,407,605	872,284	—	—	62.0	—
3 years	446,256	259,112	130,986	390,098	58.1	87.4
4 years	467,432	194,413	229,911	424,324	41.6	90.8
5 years	494,810	149,522	251,897	401,419	30.2	81.1
3-5 years	1,408,498	603,047	612,794	1,215,841	42.8	86.3
0-5 years	2,816,103	1,487,361	612,794	2,100,155	52.8	74.6

Source: Statistics on Child care, 2012.

institutions (child care centers + kindergartens) is 38.3 percent, 68.1 percent, and 79.2 percent for zero-year, one-year and two-year olds, respectively. Eighty percent or more of three-to-five year olds are reported to use either a child care center or a kindergarten.

[Figure II-2] Infant and Toddler Usage Rate of Institutions (child care centers and kindergartens)



Note: For 3-5-year-olds, child care centers + kindergartens.
Source: Adapted from annual Statistics on Childcare.

As the government expanded its support for child care costs, the ratio of infants and toddlers making use of child care institutions grew continually, with a particularly remarkable increase in the rate of zero-to-two-year-olds ([Figure II-2]). The proportion of infants using child care centers almost doubled from 31 percent in 2007 to 62 percent in 2012, with a prominent increase in the use of child care centers by zero-to-one-year-olds, who had previously tended to be cared for more by family members compared to their counterpart other age groups. Since the government policy to support child care costs required the use of child care institutions, this can be interpreted as the majority of household shifting from family care to institutional care in order to take advantage of the policy. The rate of use of child care institutions by infants in Korea is more than twice the OECD average of approximately 30 percent.

B. Costs for Using Child Care Services

According to the 2012 Survey on Child care, parents paid an average of approximately 123,000 won per month per child for a child care center or kindergarten. By institution, the monthly average expenses for using child care centers and kindergartens were 89,000 won and 194,000 won, respectively, with the latter being more than twice the former ([Figure II-3]). In comparison with 2009, the expenses for using a child care center had been almost halved from 168,000 won to 89,000 won, while those for a kindergarten were reduced by approximately 15 percent from 229,000 won to 194,000 won.

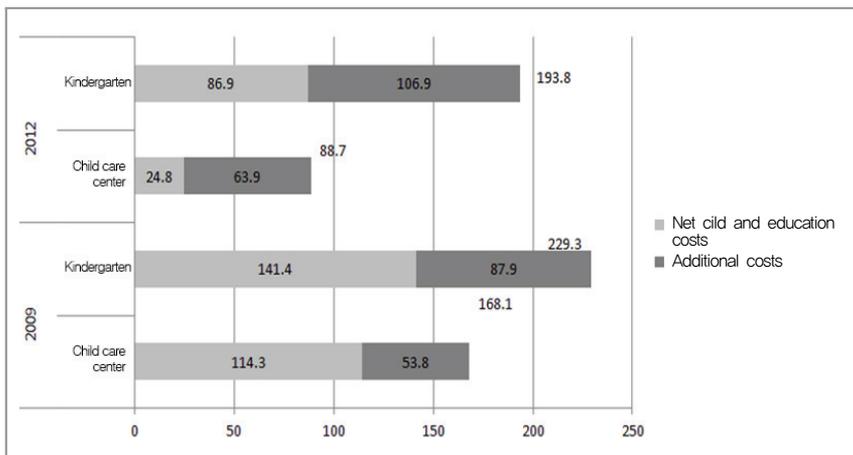
The expenses for using an institution can be broadly classified into net child care cost and additional costs. The net child care cost, approximately 25,000 won, represents a mere 28 percent of the total cost of child care center usage, with the remaining 72 percent being taken up by the additional costs ([Figure II-3]). In other words, with the implementation of the free child care policy, the net child care cost borne by households has indeed been lowered. In comparison with 2009, the net child care cost per infant or toddler borne by a household decreased by an average of 90,000 won per month, but the additional cost increased by nearly 10,000 won in 2012. Meanwhile, according to the 2012 survey, the net education cost paid when using a kindergarten was 87,000 won

for that year and the share of the net education costs out of the total costs was approximately 45 percent, relatively higher than that for a child care center. Compared with 2009, the monthly average net education cost per infant or toddler had declined by approximately 40 percent, but the additional cost increased by 20 percent or more.

As examined so far, with the expansion of government support for child care costs the burden of net child care costs borne by parents using an institution, in particular a child care center, has been reduced remarkably. However, additional costs such as special activity fees and other necessary expenses have been increased compared to three years ago, something highly likely to dilute the perceived effects of the free child care policy on relieving the burden of child care costs.

[Figure II-3] Average Monthly Child Care and Education Costs per Infant or Toddler (2009, 2012)

(Unit: 1,000 won)



Source: *Nation Survey on Childcare*, 2009 and 2012.

3 Major Issues Regarding Child Care Policy

A. Undifferentiated Methods of Support

Child care institutions in Korea have been operated on 12-hour basis (from 7:30 a.m. to 7:30 p.m.) according to a full-day program design based on which both the limits of child care costs set by the government and the unit price of government support are applied. As the Infant Care Act does not in fact prescribe the opening hours of a child care institution, there is no distinction made between the operating hours and opening hours of an institution, and financial support is delivered without discrimination. In essence, child care by its nature is a complementary welfare service for children who cannot be cared by their parents due to employment, illness or for other various reasons. Therefore, it is desirable for child care institutions to be operated on a full-day basis so that they are available according to the needs of parents. Therefore, there is no legitimate basis to be found for support that is offered without differentiating in its methodology between operating hours and opening hours. There can be a considerable difference in the usage patterns of a child care institution depending on the unique conditions of respective households. However, the current method of provision of financial support is based uniformly on a full-day program, regardless of such conditions, resulting in a serious waste of child care finances.

As people tend to be sensitive to economic incentives, there may be a behavioral change in response to a given government policy. The major behavioral change resulting from child care cost support being based on full-day program is excessive use of child care services. As the government subsidy is based on full-day usage, an increasing number of non-employed parents also have spontaneously opted for sending their children to a child care institution that offers all-day services. Under a structure that is designed without consideration of the usage costs or opening hours of an institution, parents tend to make excessive, rather than proper, use of services for their own convenience, likely resulting in showing moral hazard.

According to the 2012 National Survey on Child Care (Ministry of Health and Welfare and Korea Institute of Child Care and Education, 2012), those using child care services less than five hours per day and five to seven hours per day represent 5.7 percent and 36.8 percent, respectively, of the infants and toddlers attending a child care center. That means that, out of ten infants and toddlers attending a child care center, four children use it no longer than seven hours a day. However financial support is provided on a 12-hour basis, creating a time gap with actual usage. As financial support is offered regardless of usage as seen above, fictitious demand where services are used to a greater extent than is necessary is created leading to a waste of financial resources on the one hand and a subsidy being provided to services that do not exist the other hand, causing a further waste of funds.

In most advanced countries, support for child care costs is linked with hours of use of an institution, or even when free child care is generally provided on a half-day basis. Therefore, it is rare to find support provided on a full-day basis as in Korea. In Sweden, where a universal welfare system has been developed, the usage hours of an institution are strictly classified depending on the employment status of mothers. In Sweden, while 15 hours per week of free child care and education is universally offered regardless of the employment status of mothers, the children of employed mothers are eligible for up to 40 hours per week. Even in Sweden, where the overall level of welfare is higher than in Korea and female participation in economic activities is the norm, free child care hours offered to employed mothers average eight hours per day (40 hours a week), much less than in Korea where up to 12 hours per day of free child care is provided regardless of whether the mother is employed.

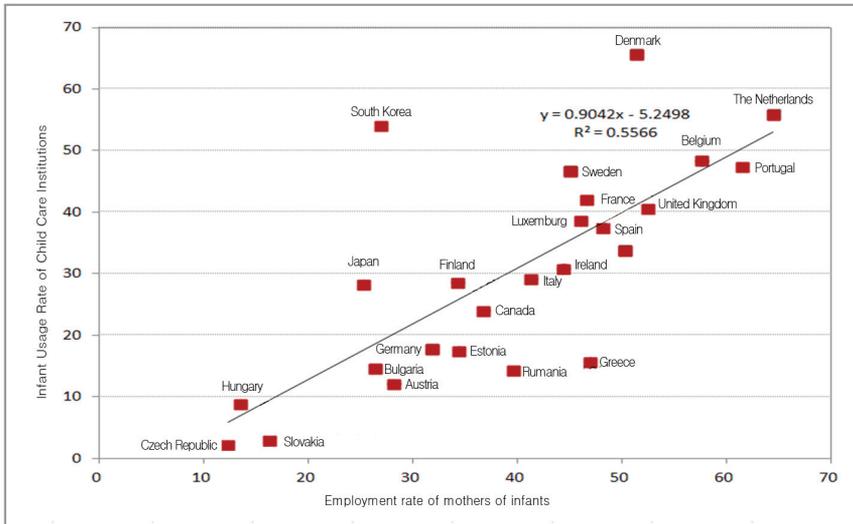
B. Excessive Use of Child Care Institutions by Infants

The infant usage rate of child care institutions nearly doubled over the past five years so that as of the end of 2012, 62 percent of all infants in Korea used child care centers (2012 Statistics on Child Care). While the toddler usage rate of institutions in Korea approaches the OECD average, the infant usage

rate is more than twice the OECD rate of 30 percent. The OECD (2006) considers family child care to be preferable for infants, for whom attachment with their parents is important, but opines that toddlers need to experience a variety of stimuli for learning and that their sociality should be nurtured through interaction with their peer groups, and thus they benefit more from attendance at child care centers. It recommends that the usage rate of institutions among toddlers should not be lower than 90 percent. In advanced countries, where women are economically active and paternity leave is the norm, it is common for parents to care for an infant by using parental leave and then turn to child care institutions when returning to work. As for infants, especially zero-year olds, institutions are not a preferred method of child care but are used only under exceptional circumstances.

That the infant usage rate of child care institutions in Korea is high when taking into account the employment rate of mothers of infants is highlighted when comparing it with those of the OECD countries. [Figure II-4] shows the relationship between the employment rates (excluding time off from work) of women with an infant as their youngest child and the infant usage rates of child care institutions in major OECD countries. As seen in the illustration, there is a strong positive correlation between the two variables. In other words, the higher the employment rate of the mothers of infants in a country, the higher is the infant usage rate of child care institutions. In a country where the employment rate of the mothers of infants is lower, family child care is more common and it tends to be accompanied by a lower infant usage rate of child care institutions. Compared to other OECD countries, however, Korea has an employment rate for mothers of infants at least 10 percentage points lower than the average and its infant usage rate of child care institutions is at least 20 percentage points higher. That the infant usage rate of child care institutions in Korea is disproportionately high relative to the employment rate of mothers of infants can be viewed as a side effect due to child care supports being applied as a means to relieve the child care burden of parents rather than offering an incentive for an increased female labor participation.

[Figure II-4] Relationship between Employment Rate of Mothers of Infants and Infant Usage Rate of Child Care Institutions in Major OECD Countries



Source: *OECD Family Database*, 2012. The data for Korea is estimated by the author based on the fifth data set from the Fiscal Panel.

The source of this excessive use of institutions by infants in Korea can be found in government support that encourages their use rather than promoting family child care. The child care allowance served as a selective support system for families in the next-needy class or below, or the vulnerable until 2012. However, it was gradually transformed into a universal benefit; it began to be offered to the lower 50 percent of income bracket in 2009, to 70 percent in 2011 and finally to all classes in 2012. Accordingly, the households in the next needy bracket or above receive no subsidy from the government when raising their children at home, but are eligible for child care cost support when using child care institutions. Child care cost support is provided by the government in the form of a voucher that cannot be en cashed for use by parents. Given that there is no monetary benefit provided for family child care, however, it has become economically preferable to use child care institutions. In particular, the government has implemented a universal free child care policy, starting with

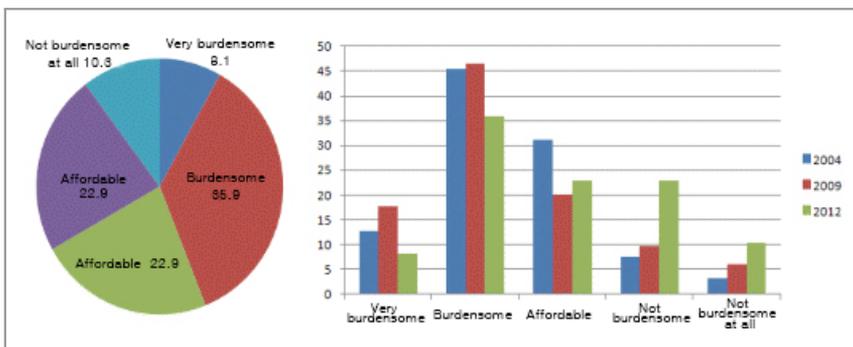
for zero-to-two-year-olds in 2012, resulting in a massive number of infants previously raised at home to flow into child care institutions that year. The fictitious demand created by the free child care policy is evident in the responses to the 2012 Survey on Child Care (Report on Survey of Households, p. 169), where approximately 22 percent of total households, notably representing approximately 30 percent of the households using a child care center, reported that they would stop using the institution if the government support was rescinded.

C. Insignificant Effect Felt from the Relieved Burden of Child Care Costs

As indicated by the fact that the bulk of the child care budget is allocated to infant and toddler care costs, relieving the economic burden of child-raising is the primary direction of child care policy in Korea. Although the government has continuously increased the pool of recipients and the volume of support for child care costs since 2004 and the so-called free child care era was initiated, the subsequent effect of the reduced child care cost as perceived by parents is not especially great. In the 2012 National Survey on Child Care, approximately 8.1 percent of all households replied “very burdensome” and 36 percent

[Figure II-5] Degree of Perceived Burden of Child Care Costs

(Unit: %)



Source: National Survey on Child care, 2004, 2009 and 2012.

“burdensome” to the question “Do you think the cost paid to the institution your children are attending is burdensome relative to your family’s economic condition?,” indicating that approximately 44 percent of total households still considered child care costs to be burdensome ([Figure II-5]). When comparing the results with those of the 2004 and 2009 Surveys on Child Care, where the proportion of households responding “burdensome” or “very burdensome” to the same question reached 60 percent, satisfaction with reduced child care cost does seem to have improved to a certain degree. However, the burden from the cost largely persists.

As seen above, almost half of the responding households considered child care costs to be burdensome in 2012 when free child care was partly implemented. Moreover, even now when child care cost support is provided to all classes with zero-to-five-year-old children, the effect of reduced child care costs as perceived by parents is not expected to be high. This is because while the net child care cost borne by parents has declined thanks to the full-scale implementation of the free child care policy, some child care centers or kindergartens have resorted to the expedient of raising child care fees through special activity fees or other ancillary expenses (expenses for vehicle operation, event expenses, field learning, photographs, uniforms and snacks, and fees for entrance preparation and admission, etc.). As a result, it is frequently reported that the child care costs actually borne by parents has not decreased to a great degree or perhaps even increased. In addition, the discrepancy between the term “free child care” and the actual burden of parents is one of the factors that undermine the satisfaction felt by recipients of the policy (Haywon Lee, 2013).

D. Difficulties in Ensuring the Quality of Child Care Services

One of the most prominent issues currently facing child care services for infants and toddlers is that their quantitative expansion has not been accompanied by a commensurate improvement in quality. Although a massive budget has been allocated for child care programs every year, the quality of child care services has not been adequately managed or supervised. From 2009 to 2012, a total of 12,543 children were injured, 461 cases of abuse were reported and 41 children died in child care centers.⁷⁾ The Infant Care Act calls on local

governments to oversee and inspect child care centers, but not in a legally binding manner. Due to a shortage of oversight personnel, child care centers go largely unsupervised. In 2012, the number of child care centers that were not inspected at all by the government was 5,632 (13.2% of the total), among which 635 centers were never inspected over the three years from 2010.⁸⁾

The persistent dispute over the quality of child care institutions is primarily attributable to the supply structure of child care services. As seen above, the ratio of child care centers with a relatively strong public orientation (public, corporate and workplace child care centers) is just 10 percent of the total, while the remaining 90 percent are private facilities. As child care essentially bears the nature of a nonprofit business, child care institutions in most advanced countries are state-run and only a few countries, including the United States, Canada and Australia, depend as heavily on private child care institutions as does Korea. The reason why it is difficult to ensure the quality of child care services under a supply structure highly reliant on private facilities is that, unlike public facilities under the control of the government, the quality of child care services offered by private facilities hinges upon the conditions at each facility or the conscience or commitment of its leadership. In many cases, it is natural for the heads of child care centers who founded a child care center for business purposes to seek private profit, such as maximized margins, rather than public good of child care in their operations. Moreover, unlike public child care centers where personnel expenses and facility installation costs are provided by the government, privately-run facilities face the challenge of financing the bulk of their operating expenses through the child care fees provided to them. This is why the funds committed to unit service at private facilities are lower than that in the case of their public counterparts, with the consequence that they are highly likely to deliver a relatively lower quality of child care services.

7) Ministry of Health and Welfare, Integrated Childcare Information System.

8) Data collected by Lee Eon-ju, a member of the Health and Welfare Committee under the National Assembly and congressperson affiliated with the Democratic Party (Segyellbo, "Untrustworthy Child care Centers ... 20 percent lost their certification after confirmation visit," October 9, 2013).

In addition, over the course of expanding child care institutions in only a brief period of time, it was expeditious to make use of private facilities rather than expanding public institutions. To this end, the qualification criteria for establishing a private child care center were only loosely applied, greatly contributing to a reduction of the quality of such centers. This year, a provision has been enacted to require a debt ratio of less than 50 percent when establishing a child care center. However, there had previously been no stipulation limiting the capital adequacy ratio of a person intending to establish a child care center. Furthermore, unlike kindergartens, which are prohibited from being operated at a leased facility, child care centers have been allowed to do so. If an over-leveraged child care center is established with a consequent heavy obligation of debt repayment and rent, the operator is likely to opt for minimizing the input costs necessary for improving the quality of child care services with an aim to maximizing margins. This can be seen as an inevitable consequence arising from the supply structure.

The negative aspects of child care centers as providers of social services detailed frequently in recent media reports describing child abuse, unsanitary meals, evasion of the law and illegal activities in their operations, have mainly been connected with private and in-home child care centers. However, the issue of the quality of child care services is not necessarily only a matter arising from the private-sector based supply structure. To be sure, quality service can be provided even under a private-sector based supply structure through an efficient distribution of resources. One of the major sources of the downward leveling of child care services can be found in the regulation of the pricing of such services. Unlike goods offered by conventional enterprises, the price of child care services may not be determined by the provider. Prices are regulated to remain within the ceiling for child care costs established by the government.⁹⁾

9) The ceiling of child care cost for infants is determined based on the unit price of government support. As for toddlers, it is determined by the competent governor or mayor of the area according to regional conditions. At present, the unit child care price for government support by age which serves as a basis for the price ceiling system is calculated by adjusting the standard child care cost calculated in the early 1990s in line with the annual inflation rate. However, such a simple adjustment based on the annual inflation rate is limited in that it cannot reflect changes in input costs over time.

In an ordinary market, there is differentiated demand for goods with varying degrees of quality according to the income or preferences of consumers, while providers offer goods differentiated in terms of quality and price in order to meet the diverse demands of consumers. In the market for child care services, however, incomes are limited by the ceiling on child care costs that restricts the opportunity to provide higher quality services through increased investment. Despite the fact that there are consumers who are willing to pay more for higher quality child care services, the path of meeting the diverse needs of consumers through improved services and differentiated prices has been blocked. As a result, input costs such as personnel expenses for teachers, food expenses and facility investment costs are minimized in order to maximize profit, leading to poor quality of child care services. In addition, as seen in the cases of some child care centers, special activity fees or other additional expenses are used as an available means to raise child care costs.

Sweden, Finland and Norway are the representative advanced countries where a ceiling for child care costs has been introduced. Sweden initiated a ceiling on costs borne by parents (Maxatasa) in 1999 and limited parents' burden resulting from using a child care facility to within a certain portion of household income, according to household income and the number of children. The ceiling for child care costs per child varies with the order of birth: 3 percent of household income for the first child, 2 percent for the second and 1 percent for the third. In Finland, the ceiling for child care costs is 200 euros for the first child, 180 euros for the second and 40 euros for the third and subsequent children. In Norway, the ceiling is fixed (2,326 Norwegian Krone, or 300 euros per month), regardless of the order of birth. Those countries implementing a ceiling system for child care costs share have one thing in common. They assume direct responsibility for providing child care services through public facilities. In these countries, private child care institutions represent only a small proportion and most of these are non-profit based. In addition, in Finland and Norway, the ceiling for child care costs is in force only for public educational institutions and price regulations are not applied to private institutions. However, a child care allowance is provided to parents using private facilities in order to compensate for their relatively higher child care costs. In Korea, a child care allowance is provided as a replacement allowance for using child care institutions,

public or private. The child care allowance offered in these two countries differs from that of Korea, however, in that the former have a strong nature as a subsidy for those who do not use public child care facilities.

The case of these two countries implies that a ceiling for child care cost is applicable only in the case of public facilities which receive facility subsidies from the central and local governments and do not require child care fees received from parents in order to finance their facility operation expenses. However, it is not suited to general private facilities that are not supported by the government because it is difficult in practice to provide affordable, high quality child care services with only independent resources in the absence of government support. Meanwhile, most child care institutions in Korea are profit-seeking private facilities and most of their heads established them for business purposes. It is natural for for-profit facilities to seek a return on investment. However, as their revenue structure is limited by the ceiling system, they resort to improper behaviors such as minimizing input costs or excessively raising special activity fees and other ancillary expenses. In other words, under the current circumstances in which a ceiling on child care cost is indiscriminately applied even to private facilities which do not receive government support, a degradation of quality of service is an inevitable structural issue.

Even when there exists a price ceiling system under a private-sector based supply structure as seen above, if there is also a mechanism in place through which high quality facilities can survive and low quality ones are winnowed out, the supply of private-sector based child care services need not directly translate into a deterioration in service quality. Where child care institutions are highly competitive, they will continuously attempt to improve in terms of quality in order to recruit greater numbers of children, resulting in maximizing consumers' utility from using quality child care services. However, in the child care service environment of Korea, a system to limit the certification by local governments for establishment of child care centers prevents the market mechanism based on free competition among institutions from operating properly. This is another reason underlying the quality issue of child care centers.

A system for local government to limit certification of the establishment of child care centers was introduced to prevent an oversupply of child care institutions due to a decreasing population of infants and toddlers. Under this

system, the head of each local government may limit the establishment of new child care centers when he/she deems that the supply of child care excessively has exceeded the demand in his/her region. As a result, in most localities, the establishment of new child care centers is wholly or partially restricted. However, the current limitation on supply does not have a positive function for preventing oversupply of child care centers, but rather generates a side effect of undermining free competition by protecting the vested interests of existing centers and bestowing them with the status of a monopoly. In regions where the establishment of new child care centers has been limited, it is not possible for newer high-quality facilities to replace existing ones of lower quality. In addition, there is no way to prevent existing child care centers from minimizing their quality-improvement efforts. Once acquiring monopoly status, existing child care centers not only face little difficulty in fulfilling their quotas, but also receive official support from the government even if they manage their facilities poorly, contributing to an inevitable downward leveling of child care services. In addition, most of the existing facilities in areas where the establishment of new child care centers has been restricted began operations in a poor financial condition at a time when there was no regulation of qualifications for establishment of child care centers. Therefore, they are highly likely to engage in loose management practices focusing on maximizing profits rather than on improving the quality of child care services.



III

Child Care Policy and Female Labor Participation

Childbirth and the burden of child care are the main factors that undermine the participation of married women in the labor market. The purpose of the free child care policy that was fully implemented starting in 2013 is to facilitate female participation in the labor market by relieving the economic burden of child-raising borne by households. In theory, reduced household child care costs should lead to increased participation by women in the labor market. To achieve this end, however, government support for child care costs should translate into an actual decrease in household spending on child care and the expanded support should not alter the choices and behavior of women regarding their participation in labor market. Therefore, there exist barriers to the theory being actualized. In reality, existing research on the impact of child care cost support on female participation in the labor market has showed mixed results. Several factors have combined to contribute to these results. The endogeneity between child care costs and women's economic activities was difficult to control; female participation in the labor market was influenced not only by the opportunity cost of child rearing, but also by conditions in the labor market; and the expanded government support for child care cost did not invariably lead to an actual decrease in household spending on child care. In addition, the price of child care in Korea is controlled by the ceiling system to a certain degree so the prices of child care services have limited influence when compared to those in other countries where there are major price differences under a private-sector based supply structure.

In this chapter, those factors that impact married women's labor market

participation other than the price of child care services will be examined. As for married women, an infant or toddler can be a major obstacle to entering the labor market. However, if conditions allowing for a balance between work and home are established, the negative impact of the existence of infant or toddler child on female participation in the labor market can be alleviated to a degree. For example, Kim Ji-kyeong and Yoo-hyeon Cho (2003) estimated that if a surrogate care giver were available, women were twice as likely to return to the labor market after childbirth as otherwise. Kim Jeong-ho (2012) found that women who had previously worked at a place of business with a child care center were more likely to return to the labor market within three years after childbirth than otherwise. Regarding factors capable of addressing the conditions that prevent married women with a child from participating in the labor market, this study focuses on the effect on female participation in the labor market of satisfaction with child care alternatives (child care institutions or individual surrogate caretakers) on the part of parents and the provision of a child-rearing friendly working environment. If the primary goal of child care policy is to reduce households' spending on child care, its ultimate goal will be to facilitate the compatibility of work and family by providing quality child care services. Therefore, the results of an empirical analysis performed in this study will provide implications for the direction of child care policies in the future.

1 Materials

The data analyzed in this study is derived from the first to third surveys from the Panel Study on Korean Children (PSKC). This panel study is a longitudinal survey administered by the Korea Institute of Child Care and Education. The surveys were administered to the households of approximately 2,000 neonates born at a medical institution collected nationwide from April to July 2008. The survey will be administered on an annual basis until 2015 when the babies born in 2008 enter primary school. Two rounds of follow-up surveys are scheduled for 2017 and 2020. In addition to conventional annual surveys, in-depth studies comprising observation, interviews and examinations will be carried out three times with approximately 10 percent of the subjects

at important time points when critical developmental milestones are expected to be reached.

The first PSKC survey was administered in August 2008. The data currently available comes from the first to third surveys performed from 2008 to 2010. In general, decisions on female labor participation are known to be greatly influenced by the existence of a child, particularly by the age of the youngest child. As the panel survey is designed to be administered among women who gave birth four to ten months prior to the first survey, it can provide a relatively homogenous group where the ages of the youngest children of the respondents are similar before an additional childbirth is reflected in the subsequent surveys. Therefore, this survey provides ideal data for the analysis of married women's participation in the labor market.

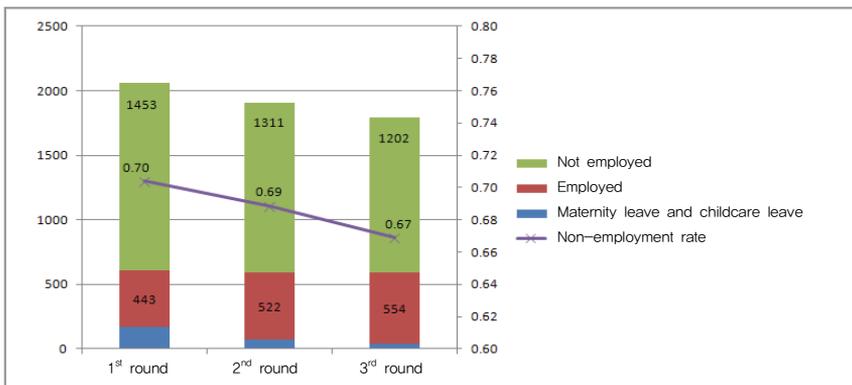
The group analyzed in this study is comprised of women who had participated in the labor market immediately before giving birth to a baby but exited the market shortly (within three years) after childbirth. These women are considered more motivated to return to work than those who quit their jobs prior to giving birth. They are highly likely to elect to leave the labor market when experiencing the actual difficulties of striking a balance between work and family. This is why they are particularly worthy of attention. Research on changes in women's participation in the labor market following childbirth, such as Kim Ji-kyeong and Yoo-hyeon Cho (2003) and Choi Hyo-mi (2006), is mainly focused on the effect of the characteristics of labor participation prior to childbirth (e.g. type of job and wages prior to childbirth, whether paid or non-paid) on return to the labor market. However, the empirical analysis performed in this study is differentiated from preceding studies in that, with these women who have returned to the labor market after childbirth, it analyzes the factors that influence their decision on whether or not to leave the labor market shortly after giving birth.

2 Labor Supply by Women with Infants

Based on the first to third rounds of the Panel Study on Korean Children (PSKC), the author identified the employment status of women who gave birth

from April to July in 2008 ([Figure III-1]). Among a total of 2,064 women participating in the first round of the PSKC, 443 respondents (21.5%) were found to be employed, while 1,453 (70.4%) were not. New mothers on maternity leave accounted for less than 10 percent of the total participants. Ninety percent of those who were employed immediately after childbirth had returned to their workplace, while the remaining 10 percent had changed their workplace after childbirth. Considering that the women participating in this panel study had given birth four to ten months prior to the time of the survey, meaning that it was after their childbirth leave period ended, a female, who was surveyed as “engaged in paid employment” was assumed either to have not used her maternity leave at all, or to have used only a portion of it and returned to work. Seventy one females (3.7%) were found to be on child care leave during both the first and second rounds of the PSKC; 423 (22.2%) were found to be on child care leave during the first round but by the second round they had returned to their original jobs; and 99 (5.2%) turned out during the second round to have found new employment. In the third round of the PSKC, 554 respondents (31.0%) were employed, while 1,202 (66.9%) were outside the workforce. Between the first and third rounds, the sample retention rate was approximately 87 percent, and the proportion of non-employed females dropped from 70 percent to 67 percent, a decline of 3 percentage points.

[Figure III-1] Change in Female Employment Status Revealed by the PSKC



Source: Panel Study on Korean Children (PSKC), 1st - 3rd round.

This study compares the employment status of the respondents at the time of the first and third rounds of the PSKC and presents the results in <Table III-1>. While the highest proportion of respondents did not experience any changes in their employment status between these two rounds, considerable changes in the labor status of some were also observed. Among those found to not be employed in the first round, approximately 85 percent reported the same status by the third round, while 15 percent were found to have reentered or newly entered the labor market by the third round. Among the respondents on leave during the first round, 32 percent were found to have dropped out of the labor market, with their employment status converted to non-employment. Fifty-seven percent returned to work after their leave ended. Meanwhile, among new mothers who were found in the first round to have returned to their workplace after childbirth, 19 percent were seen to have dropped out of the labor market by the third round. Such significant changes in employment status—from employment to non-employment, from leave of absence to non-employment, and from non-employment to employment—indicates that the employment status of females with infants or toddlers is highly subject to change due to household conditions or personal reasons.

<Table III-1> Changes in Female Employment Status from the 1st to 3rd PSKC

(Unit: number of persons, %)

		At the time of the 3rd round of the PSKC			Total
		Not employed	On leave	Employed	
At the time of the 1st round of the PSKC	Not employed	1,051 (84.8%)	6 (0.4%)	183 (14.8%)	1,240 (100.0%)
	On leave	45 (31.9%)	16 (11.4%)	80 (56.7%)	141 (100.0%)
	Returned to original job	65 (18.9%)	17 (4.9%)	262 (76.2%)	344 (100.0%)
	Found new job	5 (27.8%)	0	13 (72.2%)	18 (100.0%)
Total		1,166	39	538	1,743

Source: 1st and 3rd rounds of the PSKC.

Next, this study looked into the point at which the non-employed women in the first round of survey left the workforce: 36 percent responded that they had been out of the labor market at least since their marriage; while the remaining 64 percent quit work for reasons related to childbirth. Among those withdrawing from work due to reasons related to childbirth, roughly half did so during their pregnancy, approximately 40 percent prior to pregnancy and eight percent after giving birth. This indicates that it is indeed highly common for women who quit their jobs due to pregnancy or childbirth to drop out of the labor market prior to delivery.

<Table III-2> provides the specific reasons cited by those who withdrew from the labor market due to pregnancy or childbirth. First, approximately 40 percent of those who resigned from their jobs before pregnancy replied that they did so in order to prepare for pregnancy. With 37.5 percent of them having no plan for reemployment after childbirth, they are highly likely to have permanently exited the labor market.

The most frequently-cited reason for leaving a job during pregnancy was “in order to care for the baby on my own,” with the proportion of the subjects responding as such accounting for 41.4 percent, followed by other reasons: in order to prepare for childbirth (16.5%); no trustworthy child care option available (13.4%); and due to the difficulty of juggling work and child care (11.3%). Only less than two percent, a negligible proportion, replied they quit their job due to the financial burden of entrusting the baby to a surrogate caregiver or a child care facility.

Among the respondents who quit their jobs after childbirth, the dominant reason for the decision was the same as in the aforementioned cases, 42.3 percent of them replied that they withdrew from work in order to take care of the child by themselves. The other major reasons include lack of a place providing surrogate care for the baby (22.5%) and the difficulty of juggling work and child care (14.1%). However, a negligible number of new mothers did cite the financial burden of child care facilities. All things considered, it can be assumed that a large proportion of female workers tend to drop out of the labor market primarily in order to take care of their children on their own. This reflects two tendencies of female workers: they prefer to look after their children when their children are young and they feel dissatisfaction or distrust toward the available child care service options.

〈Table III-2〉 Reasons for Withdrawing from the Labor Market by Time of the Decision

	Prior to pregnancy	During pregnancy	After childbirth	
To prepare for pregnancy	144 (40.3%)	—	—	
Personal reasons other than pregnancy	213 (59.7%)	—	—	
Hostile or disadvantageous atmosphere in the workplace	—	25 (5.2%)	4 (5.6%)	
Lack a place for child care		65 (13.4%)	16 (22.5%)	
Unable to afford child care facilities with existing salary		9 (1.9%)	2 (2.8%)	
Difficult to juggle between work and child care		55 (11.3%)	10 (14.1%)	
To look after the children on my own		201 (41.4%)	30 (42.3%)	
Other family members' wishes		8 (1.7%)	3 (4.2%)	
To prepare for childbirth		80 (16.5%)	—	
Other		42 (8.7%)	6 (8.5%)	
Total		357 (100.0%)	485 (100.0%)	71 (100.0%)

Source: 1st PSKC.

3 Empirical Analysis

Generally, the presence of infant children has a negative influence on female labor participation. However, it is expected that this negative effect can be mitigated to some extent either when a quality alternative to nurturing by parents exists or when a child care-friendly environment can be provided in the workplace. Alternatives to nurturing by parents include personal child care assistance, such as help from grandparents or other relatives, or unrelated child care professionals, and child care services provided by institutions. Kim Ji-gyeong and Yoo-hyeon Cho (2003) have estimated that female workers who

have a proxy providing child care are twice as likely to return to the labor market compared to those who do not. Whether a new mother has an alternative to providing care by herself, such as a proxy care giver, is a major factor in her decision to return to work. It is also expected that not only the existence of an alternative, but also the quality of the alternative service and the satisfaction of the parents have a significant influence. Meanwhile, a child care-friendly working environment would include a vacation and leave policy, establishment of a child care center at the workplace, maternity protection policies and flexible working arrangements. It is expected that those working at an entity with family-friendly policies strike a balance between work and family responsibilities with greater facility, thereby having a higher likelihood to remain employed. Therefore, this study attempts to analyze the influence of the perceived satisfaction levels of female workers regarding their alternatives to nurturing children on their own and the child-rearing support policies provided by work places on the female employment status by using results from the first and third PSKC. To do so, the study devised two hypotheses:

Hypothesis 1: The higher the satisfaction female workers express regarding their alternatives to nurturing a child on their own, the less likely they are to withdraw from the labor market.

Hypothesis 2: If women are working for an entity that offers child-rearing support programs, they are less likely to withdraw from the labor market than otherwise.

In order to prove these hypotheses, this study first looked into the changes in the employment status of the 393 females who were employed during the first round of the PSKC, and who had no plan to have another child or were not pregnant between the first and third rounds of the PSKC, and then analyzed what factors impacted the changes in their employment status. The reason that observation was limited to those without plans for an additional child or who were not pregnant was to exclude the influence of additional children or pregnancies on female employment status and to compose a group consisting of female workers whose youngest children are of a similar age. The reason this analysis compared the results of the first round of the PSKC with those

of the third round is to reflect the time required for women to return to work after childbirth considering that child care leave lasts for one year at most—this should be taken into account for those who were on such leave during the first round of the PSKC. In addition, there could be cases in which a new mother having returned to work after her delivery of a baby could withdraw from the labor market, thereby raising the necessity of selecting the third round, conducted some time after the first round, as the subject of the analysis.

The composition of the sample for empirical analysis is presented in <Table III-3>. Among the 393 subjects, roughly one-quarter, or 94 (①+②) were employed during the first round but reported being not employed at the time of the third round, thus making up the group dropping out of the labor market shortly after childbirth. Meanwhile, 299 respondents (③) remained employed through these two rounds of the PSKC. Those who dropped out of the labor market can be divided into two subgroups: 48 respondents who were not employed at the time of the second round of the PSKC; and 46 respondents who responded as such during the third round.

The variables considered in this study as factors affecting the decision of a female with infant children regarding whether or not to remain in the labor market include the mother's age, her educational attainment, work status, household's income and assets, and husband's work status. Among these variables, some factors (such as household income or mother's work status) have a considerable influence on a woman's decision as to whether or not to remain employed. For these variables, the values from the first round were used for an estimation at the point when all selected respondents were employed. Two other factors that could affect female participation in the labor market after

<Table III-3> Composition of Empirical Analysis Sample

1st round	2nd round	3rd round	N	Group
	Employed	Unemployed	46 ①	Withdrawing from the labor market (① + ②):94
Employed	Unemployed	Unemployed	48 ②	
Employed			299 ③	Maintaining employment (③):299
Total			393	

Source: 1st and 3rd rounds of PSKC.

childbirth are a mother's satisfaction with her alternatives to caring for the baby on her own (such as a hired care giver at home or the use of child care facilities) and whether the mother is provided with maternity and child care support by her workplace (and, if any, whether the mother benefits from such programs). For these two variables, the difference in response time was factored in by selecting the values from the round carried out at the most adjacent time to the respondent's decision to quit her job; more specifically, it is assumed that whether the new mother was employed or unemployed during (t) round of the PSKC depends on the level of satisfaction with the proxy care givers or her use of child care support programs revealed during (t-1) round. Based on this assumption, the values from the second round were used for those who were found to have withdrawn or remained in the labor market during the third round. As for the respondents who were found to have quit their job during the second round, the values from the first round were used. The basic statistics of each variable for the first round are presented in <Table III-4>.

A comparison between the basic statistics of respondents who remained

<Table III-4> Basic Statistics of Sample

		Mean value	Standard deviation	Minimum	Maximum
Age		31,74	3,44	21	42
Educational level	High school graduate or below	0,16	0,37	0	1
	Bachelor's degree	0,72	0,45	0	1
	Master's degree or higher	0,12	0,33	0	1
Monthly household income (KRW 10,000)		424,78	161,36	80	1,300
Household net assets (KRW 10,000)		15,714,35	20,266,0	-15,999,5	135,000
No. of children		1,65	0,65	1	4
Mother's work status (full-time = 1)		0,82	0,38	0	1
Husband's work status (full-time = 1)		0,84	0,37	0	1
Whether provided with childbirth and child care support (provided = 1)		0,73	0,44	0	1
Satisfaction level with the proxy care giver and use of child care institution (satisfied or very satisfied = 1)		0,56	0,50	0	1

Source: PSKC 1st round.

consistently employed from the first to third round of the PSKC, and those of respondents who had withdrawn from the labor market as of the third round is presented in <Table III-5>. For the variables that do not reflect the effect of the transition in female employment, the values used are from the first round when all selected respondents were employed. According to <Table III-5>, the average age of the new mothers who remained employed is higher to a statistically significant degree compared to those who withdrew from the labor market. In addition, the former group's average monthly household income is

<Table III-5> Comparison of Basic Statistics between the 1st and 3rd Rounds of PSKC by Employment Transition

		Remained employed	Employed → non-employed
Age		32.03 (3.33)	30.83** (3.64)
Educational level	High school graduate or below	0.15 (0.36)	0.19 (0.40)
	Bachelor's degree	0.72 (0.45)	0.71 (0.45)
	Master's degree or higher	0.13 (0.34)	0.10 (0.30)
Monthly household income (KRW 10,000)		439.21 (162.00)	377.82** (150.76)
Household net assets (KRW 10 million)		15208.91 (18861.3)	17322.06 (24244.76)
No. of children		1.70 (0.04)	1.52* (0.07)
Mother's work status (full-time = 1)		0.85 (0.36)	0.74* (0.44)
Husband's work status (full-time = 1)		0.84 (0.37)	0.83 (0.38)
Whether provided with childbirth and child care support (provided = 1)		0.72 (0.45)	0.64** (0.48)
Satisfaction level with the proxy caregiver and use of child care institution (satisfied or very satisfied = 1)		0.66 (0.47)	0.32** (0.47)
N		299	94

Note: The difference between the two groups is statistically significant, ** p<0.01 or * p<0.05.

600,000 won greater than that of the latter group (as of the time of the first round of the PSKC). On the other hand, the difference between the two groups' household assets was not statistically significant. Among those remaining employed, 85 percent were holders of full-time positions, nearly 10 percentage points higher compared to those out of the labor market (74%). Among the former group, 72 percent reported working for an entity that provided maternity and child care support benefits, while 64 percent of the latter group worked for one without such benefits. This difference is statistically significant. Working mothers are required to turn to nurturing facilities such as daycare centers or proxy care givers. Among the former group, 66 percent responded that they were satisfied or highly satisfied with their alternative care givers or institutions they used. This figure was more than twice that of the latter group (32%).

The results of probit-model estimation on factors that led female workers to withdraw from the labor market between the first and third round of the PSKC are provided in <Table III-6>. In this table, Model 1, the most basic form, presents the results with variables related to the individual and household characteristics controlled. When other variables are adjusted, the effects of household income and net assets are statistically significant, but have an inverse correlation with female employment; that is to say, the higher the household income, the less likely is the new mother to drop out of the labor market and the greater the net assets a household held, the more likely the female worker was to quit her job. The higher the household income of a female worker during the first round, the less likely she turned out to have withdrawn from the labor market during the third round. This is assumed to be attributable to the close correlation between household income and the female worker's wages. Even though the PSKC did not separately document the incomes of a woman and her spouse, it is highly likely that a working mother in a household with a high overall income is earning relatively a higher wage than those in lower income households. A female who earns a relatively higher income has a greater economic incentive to retain job, since the opportunity cost she has to pay upon quitting her job is higher. On the other hand, the fact that the net assets of a household have a proportional relation (or positive correlation) to the likelihood for a female worker to withdraw from the labor market is attributable to the income effects. As for a mother's work status, those who hold full-time positions

are less likely to withdraw from the labor market than are those with temporary or daily positions. Other factors such as the mother's age, her educational background, the number of children and the father's work status turned out to be inversely proportional (or in a negative correlation) to the likelihood, although the correlations were not statistically significant.

In addition to the basic features of individual working mothers and their households, Model 2 included satisfaction level with a surrogate caregiver or nursing facility. A respondent's satisfaction level showed a statistically significant negative correlation with withdrawal from the labor market. This means that if other variables are controlled, those who are satisfied with their caregiver or care facility would be more likely to remain employed than who are not. When the marginal effect is calculated with all other variables held at their mean values, those in the former group are estimated to be 20.6 percent less likely to withdraw from the labor market than are those in the latter group. Compared to Model 1, a mother's work status and household net assets have similar correlations in relation to women's withdrawal from the labor market, but they are not statistically significant.

In Model 3, how the provision of maternity and child care support by a workplace affect a female worker's decision to drop out of the labor market is examined. When other variables are controlled, female employees who work for an entity providing such benefits turn out to be less likely to quit their jobs than are those whose workplace does not offer them, but the effect is not statistically significant. This indicates that child care support provided by a workplace on its own does not reduce the proportion of women leaving the labor market, but such beneficial programs should be implemented in such a way as to ensure that the recipients are in actuality benefiting from them. Model 4 includes variables showing, by respective benefit, whether the respondents actually made use of a specific benefit so that simple implementation and actual beneficial effects could be separately identified. An observation of Model 4 reveals that among forms of maternity and child care support, the main variable that affects women's decisions to withdraw from the labor market is whether the respondent actually uses child care support, including a workplace child care center or subsidies for child care facility fees. Those who benefit from such assistance are less likely to withdraw from the labor market than are those who

〈Table III-6〉 Factors Affecting Female Workers' Withdrawal from the Labor Market (Withdrawal from the labor market = 1)

	Model 1	Model 2	Model 3	Model 4	Model 5
Mother's age	-0.035 (0.026)	-0.014 (0.027)	-0.024 (0.027)	-0.040 (0.027)	-0.021 (0.028)
Mother's years of education	-0.035 (0.090)	-0.067 (0.093)	-0.045 (0.091)	-0.034 (0.092)	-0.057 (0.095)
No. of Children	-0.149 (0.133)	-0.159 (0.136)	-0.160 (0.133)	-0.124 (0.134)	-0.112 (0.138)
Monthly household income (KRW 10,000)	-0.002*** (0.001)	-0.001** (0.0005)	-0.002*** (0.001)	-0.002*** (0.0006)	-0.001** (0.0006)
Household assets (KRW 10 million won)	0.010** (0.004)	0.006 (0.004)	0.009** (0.004)	0.010** (0.004)	0.007* (0.004)
Mother's work status (full-time = 1)	-0.353* (0.187)	-0.290 (0.193)	-0.324 (0.198)	-0.290 (0.196)	-0.256 (0.205)
Father's work status (full-time = 1)	-0.072 (0.176)	-0.164 (0.182)	-0.098 (0.176)	-0.032 (0.179)	-0.108 (0.185)
Provision of maternity and child care support by the workplace (provided = 1)			-0.115 (0.172)		
Vacation and leave (use = 1)				-0.227 (0.179)	-0.045 (0.190)
Child care assistance (use = 1)				-0.475** (0.234)	-0.591** (0.244)
Maternity protection (use = 1)				0.141 (0.279)	0.143 (0.288)
Flexible working environment (use = 1)				-0.082 (0.211)	-0.060 (0.222)
Satisfaction level with proxy caregiver or nursing facility (satisfied or very satisfied = 1)		-0.706*** (0.156)			-0.749*** (0.161)
Constant	1.627** (0.749)	1.320* (0.780)	1.389* (0.766)	1.843** (0.765)	1.487* (0.799)
Log likelihood	-190.629	-165.618	-188.821	-175.805	-158.775

Note: *** p<0.01, ** p<0.05, * p<0.1.

〈Table III-7〉 Effects of Child Care Support Policies on Female Withdrawal from the Labor Market

Child care support policies	Coefficient	Standard error
Maternity leave	-0.190	0.206
Female childcare leave	0.204	0.210
Paternity leave	-0.79	0.282
Child care center at the workplace	-1.340**	0.579
Child care subsidies	-0.129	0.260
Lactation room	0.965	0.699
Paid lactation breaks	1.432	0.857
Flexible office hours	0.319	0.332
Substitute labor pool	-0.174	0.251

Note: Results when other variables are controlled.

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

〈Table III-8〉 Estimation of Marginal Effects in Model 5

	dy/dx	standard error	Z
Mother's age	-0.006	0.008	-0.76
Mother's years of education	-0.016	0.026	-0.59
No. of children	-0.031	0.038	-0.81
Household income (KRW 10,000)	-0.0004	0.0002	-2.26
Household assets (KRW 10 million)	0.002	0.000	1.65
Mother's work status (full-time = 1)	-0.075	0.064	-1.17
Father's work status (full-time = 1)	-0.030	0.053	-0.57
Provision of maternity and child care support by workplace			
Vacation and leave	-0.013	0.053	-0.57
Child care assistance	-0.136	0.045	-3.00
Maternity protection	0.041	0.087	0.47
Flexible working environment	-0.016	0.059	-0.27
Satisfaction level with proxy care giver or nursing facility (satisfied or very satisfied = 1)	-0.216	0.047	-4.56

Note: *** p<0.01, ** p<0.05, * p<0.1.

do not. The calculation of their marginal effects with other variables held at the mean values shows that those who actually make use of such benefits are 11.9 percent less likely to withdraw from the labor market than are those who do not. Meanwhile, it is estimated that whether or not a respondent actually takes advantage of maternity and parental leaves and flexible working options has a negative relationship to her likelihood to withdraw from the labor market, but it is not statistically significant. If all of the specific childbirth and child care policies are taken into account, the policy that holds a statistically significant impact on woman's decision to quit her job turns out to be use of a workplace child care center (<Table III-7>).

Finally, whether a respondent uses maternity and child care support and how satisfied she feels with a surrogate caretaker are taken into account simultaneously in Model 5. When all other factors are adjusted, the effects of household income and assets turn out to be the same in Model 5 as in Model 1. In addition, the use of child care support provided by the workplace and the satisfaction level expressed by the respondents regarding the proxy care reduce female workers' alienation from the labor market to a statistically significant degree. A calculation of these variables' marginal effects with other variables assumed at their mean values reveals that those who are satisfied with their proxy caregivers or the child care facilities of their choice are 21.6 percent less likely to withdraw from the labor market compared to those who are not. Those who make use of workplace child care support are 13.6 percent less likely to quit their job than those who do not (<Table III-8>).

4 Sub-conclusion and Policy Implications

Despite considerable advancements in the overall educational level of the female population, South Korea's female economic participation has reached only 70 percent of that of the male population, among the lowest proportion found among OECD countries. The burden of caring for children is one of the major obstacles to women's participation in the labor force. The decline in the female labor supply caused by the burden of child care is considered serious

in that it could lead to a quantitative reduction in the total productive population, as well as a qualitative degradation of the available human capital.

Therefore, effective policies should be put in place to expand the female labor supply, such as providing quality child care facilities to which working mothers can entrust their children with a sense of security, or reducing the financial burden of child care borne by respective households. Actual increases in the female labor supply can be ensured only when these two policies are simultaneously implemented. In contrast, South Korea's child care support policies have remained focused solely on the latter. Theoretically, reduced child care costs will lead to an increase in a woman's net wages, which in turn should result in an increase in the supply of female workers. In preceding studies, the elasticity of female labor to child care costs has been consistently estimated as having a negative value. However, in order for reduced child care costs to in fact translate into a significant increase in the female labor supply, two prerequisites should be satisfied: first, the government's subsidies for child care must result in an actual reduction in household child care costs; and second, high-quality, affordable child care infrastructure must exist.

Under the current circumstances, it seems difficult for South Korea to satisfy these two standards. As for the first precondition, increasing fees for extracurricular activities and other expenses cause parents to perceive only a negligible cost reduction effect, despite the government's subsidies for child care. As for the second prerequisite, a deeply-rooted distrust toward the quality of nursing facilities has emerged since the country has failed to supervise and manage the quality of child care facilities while pursuing a quantitative expansion of the available child care infrastructure. When it comes to child care services, parents desire not only cheaper options, but also high-quality services. Due to this, it is difficult to expect new mothers to enter into the labor market and leave their children's care in the hands of child care facilities as long as there exists distrust of affordable daycare centers.

The results of the empirical analysis of currently implemented child care policies presented in this chapter indicate that in order to minimize female workers' career discontinuity caused by childbirth and to gain full access to the potential female workforce, it is required to boost mothers' satisfaction with the use of child care facilities by boosting their overall quality, as opposed to

simply providing child care-related subsidies. Among those who withdrew from the labor market, only a negligible number of women decided to quit their job due to the financial burden of child care facilities, while a large proportion cited the absence of a trustworthy child care facility as a main reason for the decision. Considering the fact that an increasing number of new private and in-home day care centers have been established over the last few years, the general perception of having no place to entrust children has nothing to do with a lack of access to facilities caused by some failure of supply, but is much more likely to reflect public concerns over the quality of day care centers. This study also found a considerable difference in the satisfaction level with the care giving alternative between those who dropped out of the labor market after a short period of time and those who maintained employment. In addition, the fact that those who are using workplace child care facilities are more likely to hold on to their jobs compared to those who are not reflects a relatively higher degree of trust toward such types of facilities among the respondents. Therefore, the results of this study provide the following policy implication: in order to fulfill the goal of increasing the labor supply of married female workers, it is important to boost the satisfaction level of parents regarding the available alternatives to their own caring for their children through an enhancement of the quality of child care infrastructure.

In Korea, it can be seen that married women have dropped out of the labor market not because of the financial burden resulting from the use of child care facilities, but mainly due to a paucity of trustworthy child care facilities. This indicates that a major overhaul is required of the country's child care-related policies focused mainly on the provision of subsidies. This year alone, a massive sum, 4 trillion won, was poured into maternity and child care-related subsidies. Compared to the investment, however, the actual benefits received by society as a whole, as measured by an increase in the female labor supply, are expected to be negligible. In order to improve the efficiency of child care-related fiscal expenditures, child care policy should be designed in such a way as to place priority on the enhancement of the quality of child care facilities and thus provide incentives for women to participate in the labor market.

IV

Child Care Policies and Fertility Rates

Over the last few years, the government has been expanding both the pool of recipients and the amounts of its child care subsidies in an effort to address the unprecedented low national fertility rate by reducing the economic burdens of child care. However, it is difficult to judge whether these efforts have resulted in boosting the birthrate as initially intended. This is mainly due to the following reasons: multiple characteristics of given individuals and their households are reflected in a complex manner when decision is made on whether or not to have a baby; some aspects of childbirth-related decisions hamper individuals in responding to the government's child care policies over only a brief period of time. If government child care-related subsidies are effective, the national birthrate should gradually increase. However, insufficient time has passed since the implementation of the policy of a universal child care subsidy. Therefore, it seems premature to analyze the direct effects of such policies.

The greatest obstacle to estimating the effects of the child care subsidies on improvements in the birthrate is the endogeneity between a household's expenditures on child care and the decision of whether or not to have a baby. Generally, a household's child care spending depends on its various socio-economic characteristics, and these features simultaneously influence the decision to procreate, thereby increasing the likelihood of endogeneity. More specifically speaking, it is inevitable for some variable to be omitted in the regression equation for estimating the correlation between child care expenditures and childbirth. If an omitted variable has a positive (or negative) correlation to both factors, the coefficient of the variable can be over- (or under-) estimated

(Kim Jeong-ho and Hong Seok-cheol, 2013). Even though government child care subsidies are provided through in-kind transfer rather than via cash transfer, an income effect is in fact generated, so there exists room for the parents to use the extra money stemming from reduced child care costs due to the governmental child care subsidies on the children's private education, making it more difficult to estimate the mechanism through which the provision of such subsidies affects fertility rates. For instance, Kim Jeong-ho and Hong Seok-cheol (2013) found that households provided with child care benefits spent more on child rearing expenses than did those not receiving such benefits.

Therefore, this study takes an indirect approach to identifying whether household income has a positive influence on a woman's decision to have additional children, instead of estimating the direct effects of child care subsidies on the encouragement of childbirth. This is the same approach explored by Choi Joonook and Heon-jae Song (2010): the primary effects of financial support for child care lie in an increase in household income. Under the premise that governmental child care benefits raise a household's disposable income, the empirical analysis of this study attempts to identify whether there exists a positive correlation between the income effect and a household's decision to have additional children. In the cases where such a correlation exists, the study further attempts to ascertain how likely the income effect is to differ depending on household income level. Of course, this analysis is based on the assumption that government child care cost subsidies lead to a decrease in households' child care expenditures, in turn resulting in additional disposable income for the household. However, given the fact that in reality it is difficult for all this to take place in the aforementioned manner, the results of the analysis should be interpreted with such limitations taken into account.

1 Dataset

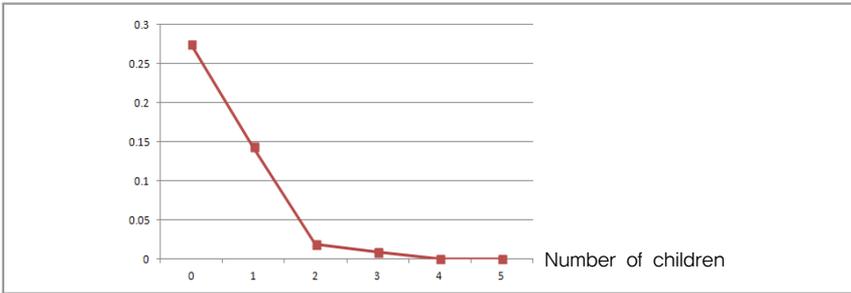
The datasets used for this analysis are derived from the third round of the Korean Longitudinal Survey of Women and Families (KLoWF). The KLoWF is a series of surveys conducted by the Korean Women's Development Institute (KWDI) for the purpose of establishing a database related to women's economic

activities, changes in their family relationships and their perceptions on families according to respective stages of their life cycles. The subjects of the survey include 10,013 women aged from 19 to 64 years old drawn from approximately 9,000 households representing all households nationwide. The first round of the survey was conducted from September 2007 to February 2008; the second in 2009; and the third was completed in 2011.

In the empirical analysis presented in this section, the variable related to childbirth is the intention to have an additional child. Of course, it is evident that this variable has certain shortcomings compared with data on actual births, since there is the chance that such an intention will not in fact result in an actual childbirth and the use of this variable must be based on the assumption that the intention is sustained to the point of achieving an actual childbirth (Choi Joonook and Heon-jae Song, 2010). However, the intention toward future childbirth does hold meaning in itself in that it is a reflection of a positive perception toward childbirth. This is because the ultimate goal of childbirth encouragement policies designed, for example, to reduce child care costs or establish a family-friendly environment is to enhance an individual's intention to bear children by addressing those factors that may discourage that individual or his/her household from having children. While actual birthrates are connected to realistic limitations, such as the general conditions of the household and the health status of the woman, the intent to have additional children offers a yardstick to judge the level of positive perception of childbirth among the general public, despite it being impossible for the variable to be perfectly distanced from the aforementioned shortcomings. Given the fact that the more positive perception a society holds toward childbirth, the more likely that society is to foster a family-friendly environment, this variable regarding the intention to have additional children is deemed to be worth analysis despite its multiple shortcomings.

The subjects of this empirical analysis are composed of 651 households that include a married woman within the childbearing age range of 21 to 45 and an infant. The reason for excluding childless households is that the factors a childless household takes into account when making a decision on whether or not to have a first child can be distinct from those considered by households already populated by one or more children when they are planning an additional child. Because some childless households may be more likely to decide not to have

[Figure IV-1] Intention to Have Additional Children by Number of Children



Source: 3rd round of the KLoWF.

a baby due to their preference for remaining childless or out of other considerations, there is the possibility that another decision-making function can exist, which is different from the case of households with one or more children. That is to say, there is a chance that a childless household will not react to changes in the variables expected to impact a household's intention to have additional children. Therefore, this study first limits the scope of the empirical analysis to those households with one child or more and takes a step further to exclude households with two or more children, thereby leaving only households with one child in an effort to maintain consistency in the number of existing children. This is because households with two or more children tend to be considerably less likely to show an intent to have additional children, as seen in [Figure IV-1].

2 Comparison of Basic Statistics according to the Existence of a Plan for Additional Children

Among the 651 households included in the sample, 277 households, or 42.6 percent of them, report an intention to have additional children, and 374 households, or 57.4 percent, do not. While only 14.3 percent among households with one child of any age intend to have another baby, the figure is three times higher among those with one infant child. This is assumed to be the result of the complex interactions between parental preference to maintain a narrow age

gap between children and of the age the woman bearing the child.

The households in the sample were first divided into two groups according to their intent to have another child. Each group's basic statistics are compared in <Table IV-1>, which illustrates certain significant differences between the two groups. First, the average age of women planning to have another baby is 30.68, two years younger than those with no such a plan (32.83), and the difference is statistically significant. Based on this, it is suggested that not only the actual birth history of the individual, but also the intention to bear additional children is affected by the age of the woman involved. As for the educational level of the women, those in the former group turned out to be more educated than those in the latter. A difference between the two groups was also identified in the age of the existing child. The average age of the child in households with no plan for additional children was 2.6, more than one year older than that of the child in households with such a plan (1.5). The tendency for households with a plan to have a younger have a younger existing child can be viewed as a result of the parental preference for a younger maternal age at the time of birth and a narrow age gap between children.

The monthly average child care expenditure dedicated to the existing child among households without a plan for an additional child is 173,000 won, more than double of that of households with such a plan (81,000 won). It is possible that households burdened with a relatively higher cost of rearing a child are more unwilling to have another baby due to the heavier expected financial burden. As predicted through the Quantity-Quality Trade-off Model (Becker, 1960), this reflects the parents' decision to invest more in the quality of child care rather than increasing their number of children. The level of a household's expenditure on child care reflects that household's preference for the quality of child care to some extent. However, as pointed out by Choi Joonook and Heon-jae Song (2010), there exist some factors making it inappropriate to perceive of expenditures on an infant or toddler as a type of investment, since such spending may be inevitable in a household with children. The difference in the child care expenditures between the two groups observed in this comparison of basic statistics is estimated to reflect the age of the existing children. It is highly likely for households without a plan to have additional children to spend more on child care simply because the average age of the

child in these households is relatively higher.

The fact that the dummy variable of “sonless” shows a clear distinction between the two groups is assumed to reflect the influence of the preference for sons. Among households with a plan for an additional child, the proportion of the household’s single child being a daughter accounts for 66 percent, which is relatively higher compared to households with no such plan (58%). Meanwhile, other variables—whether or not the mother is employed, the level of monthly household income, net assets, whether the father is employed and whether the family lives in Seoul or other metropolitan areas—turned out not to have statistical significance in terms of plans regarding additional children.

〈Table IV-1〉 Comparison of the Basic Statistics according to the Existence of a Plan for Additional Children among Households with One Child

		Planning to have additional children	Not planning to have additional children
Age of the Mother		30.68 (3.81)	32.83 ^{**} (4.52)
Mother’s educational level	High school graduate or lower	0.23 (0.41)	0.41 ^{**} (0.49)
	Bachelor’s degree	0.72 (0.45)	0.55 ^{**} (0.50)
	Master’s degree or higher	0.05 (0.22)	0.03 (0.16)
Mother’s employment dummy (employed = 1)		0.32 (0.47)	0.35 (0.48)
Monthly household income (KRW 10,000)		318.97 (181.48)	313.37 (135.57)
Household net assets (KRW million won)		158.07 (156.71)	134.98 (109.16)
Age of children		1.50 (1.40)	2.26 ^{**} (1.48)
Monthly average child care expenditure (KRW in 10,000 won)		8.14 (12.55)	17.25 ^{**} (15.78)
Father’s work status dummy (paid worker = 1)		0.76 (0.42)	0.69 (0.46)
Sonless dummy (sonless = 1)		0.66 (0.29)	0.58 ^{**} (0.49)
Residence in Seoul or other metropolitan area (positive = 1)		0.30 (0.46)	0.39 (0.46)
N		277	374

Note: The sign “***” indicates that the difference between the two groups is significant at the significance level of 1 percent.

Source: 3rd round of the KIoWF.

3 Empirical Analysis

As a next step, the probit-model estimation is used to ascertain which factors affect the intention of households with one child to have another child (<Table IV-2>). The age of the mother turned out to play an important role; as age increases, the more unwilling is the household to have another baby. The magnitude of the coefficient between the two is 2.7, meaning that as the woman grows one year older, the likelihood for her household to be willing to have another child decreases by 2.7 percent. The woman's educational level and whether or not she remains employed have positive and negative correlations, respectively, but these relations are not statistically significant. The relationship between female participation in economic activities and the intention to have another child is difficult to define. Female participation in the workforce can have a negative influence on a household's intention to have another child by raising the opportunity costs of childbirth and child rearing. At the same time, however, increased household income resulting from the mother's employment can serve as a positive factor in the household having the intention to bear another child. Consequently, female participation in the workforce can bring about contradictory effects on the intention to have another child and the correlation between female labor participation and such intention should therefore be empirically analyzed. The empirical analysis of the overall sample presented in this study shows that whether or not a woman was employed did not have a statistically significant effect on this intention. This result is likely to stem from the offsetting effects of the aforementioned contradictory influences.

Meanwhile, household income, which represents a household's current economic stability, turned out to have a positive correlation with the intention to have another child. As a household with one infant experiences an increase of one million won in its monthly income, the household is estimated to be approximately four percent more likely to report an intention to bear another child. On the other hand, other variables which represent the household's future financial stability, including household net assets and the work status of the man in the household, turned out to have no statistically significant correlation. The age of the existing child has a negative correlation with the intention to

have another child. It is estimated that this negative correlation reflects either the parents' preference for a narrow age gap between children or a younger age for the childbearing woman in the household. As to the effect of the location of the household, whether the household resides in Seoul or another metropolitan area, households residing in such locations are approximately 17.3 percent less likely to report the intention to have another child compared to those residing in the other parts of the country. This indicates that there is a possibility that these two groups of households have different preferences in terms of family size. Finally, the "sonless" dummy variable showed a positive correlation, but its magnitude is not statistically significant.

The aforementioned factors affecting the intention to have an additional child can result in varying effects according to the household's income bracket. The analysis of these factors' different impacts on the intention to have another child by income bracket—bottom 30 percent, middle 40 percent, and top 30 percent—is presented in columns (2) to (4) of <Table IV-2>. An observation of the results of the analysis reveals that the age of existing children consistently has a negative correlation with this intention across all income brackets, but other factors have different effects depending on income bracket.

First, the intention to have another child among households in the lowest 30 percent income bracket is affected by various factors. While an older age for the mother indicates a lower likelihood for her household to intend to have another child, the more the mother is educated, the more likely her household is to have such an intention. This relationship between a mother's educational level and the intention to have an additional baby is statistically significant, which is not observed among households in other income brackets. The degree to which an increase in household income translates into a higher likelihood for the household to bear the intention to have another child was strongest among households with lower incomes. The estimation of this variable's marginal effects shows that as a household's monthly income increases by one million won, the likelihood for the household to report the intention to have another child rises by 15 percent. Meanwhile, the dummy variable of "sonless" turned out to have a positive, statistically significant correlation, and its magnitude was also considerable. Among the households in this income bracket, those with a daughter are 17.7 percent more likely to report the intention to have another

child compared to those with a son. This can be interpreted as a result of the longstanding Korean preference for sons. The fact that this variable has an impact only among low-income households indicates that households of different income brackets show different levels of preference for sons in Korea. Finally, the dummy of household location, whether it resides in Seoul or other metropolitan areas, has a negative correlation with the intention to a statistically significant extent among households in the higher income brackets, but not among the lowest income households.

As for middle-income households, the affecting factors regarding the intention to have another child are as follows: the mother's age; whether or not the mother remains employed; whether the household resides in Seoul or other metropolitan areas (dummy variable); and the age of the existing child. Most of these have a similar effect as in the analysis of the total sample, but the mother's employment status has a negative correlation with the intention to a statistically significant extent. As mentioned before, this variable does not hold statistical significance in the estimation of the total sample. This divergence might reflect the difficulties that women in middle-income households face in balancing work and family. However, further research is required to determine why this variable of whether the mother remains employed showed a negative effect on the intention to have another baby only among this group of households. Another variable with a distinct impact on such households is income; the size of a household's income does not have any effect within this group, which is unique compared to the correlation observed among the other households. Even though it is not statistically significant, in the other income brackets the variable of household income shows a negative correlation with the intention to have one or more additional children. This can be viewed in relation to the aforementioned negative effect of a woman's employment on the intention to have another child. While female employment can have a positive effect on plans for another baby by raising the household's total income, it can also have a negative impact if there exist obstacles to managing both work and family responsibilities. In this group of middle-income households, female participation in the workforce not only brings about an increase in total household income, but also incurs additional costs. Therefore, it is possible that the variable's positive effect on boosting the intention to have another child is offset by the

extra costs generated.

Finally, the variables affecting the intention of households in the highest 30 percent income bracket to have another child are as follows: household income; whether or not residing in Seoul or other metropolitan areas; and the age of existing children. The signs of the estimated coefficient for each variable are the same as in other income brackets. The mother's age, however, does not have a negative effect on the high-income households' intention to bear another child to a significant extent, which differs from the results shown in the other income brackets.

〈Table IV-2〉 Factors Affecting the Intention for Another Child among Households with One Child

	Total sample (1)	Income bracket		
		Income deciles from 1 to 3 (2)	Income deciles from 4 to 7 (3)	Income deciles from 8 to 10 (4)
Mother's age	-0.069 ^{***} (0.018)	-0.098 ^{***} (0.024)	-0.063 [*] (0.036)	-0.045 (0.039)
Mother's years of education	0.060 (0.050)	0.135 [*] (0.077)	0.062 (0.102)	0.103 (0.113)
Mother's employment dummy	-0.126 (0.151)	0.366 (0.290)	-0.610 [*] (0.319)	0.220 (0.275)
Household income	0.001 ^{**} (0.0005)	0.004 ^{**} (0.002)	-0.003 (0.003)	0.002 ^{**} (0.001)
Household net assets	0.002 (0.007)	-0.007 (0.000)	-0.006 (0.000)	0.004 (0.000)
Seoul or other metropolitan residence dummy	-0.456 ^{***} (0.142)	-0.176 (0.215)	-0.610 ^{**} (0.298)	-0.615 [*] (0.321)
Sonless dummy	0.097 (0.129)	0.457 ^{**} (0.194)	-0.369 (0.271)	0.230 (0.288)
Age of existing children	-0.174 ^{***} (0.046)	-0.134 [*] (0.070)	-0.214 ^{**} (0.093)	-0.167 [*] (0.093)
Father's work status dummy (employed)	0.067 (0.141)	0.060 (0.209)	-0.041 (0.290)	0.097 (0.325)
Constant term	1.789 ^{***} (0.623)	1.408 (0.930)	3.308 ^{**} (1.532)	-0.681 (1.609)
Log likelihood	-381.295	-127.786	-156.318	-79.925

Note: ***p<0.001, **p<0.01, *p<0.05.

4 Sub-conclusion and Policy Implications

The empirical analysis presented above is distinct from previous ones in that it makes a direct comparison of the intention to have another child within households with a single infant child and the total sample by limiting the scope of analysis to the former group, and in that it attempts to take into account the possibility of households in different income brackets manifesting different factors affecting their intention to have another child. Among the variables considered in the empirical analysis, the effect of the household income variable on the intention to have another child has implications for the government's expansion of child care subsidies for the promotion of childbirth. Such policies would reduce a household's expenditures on child rearing, which in turn should result in an increase in the household's disposable income. One keen interest of policy makers lies in how increased disposable income affects the national birthrate. The results of the analysis here show a positive correlation between household income and the intention to have another child, one that is statistically significant even when other variables are controlled. In particular, this relationship seems relatively more evident among households among the bottom 30 percent by income. This means that increases in household disposable income resulting from governmental provision of child care subsidies and child care allowances would bring about a relatively higher impact on boosting the birthrate among low-income households. It is estimated that for low-income households an increase of one million won in monthly income results in a 15 percent greater likelihood for a household to have the intention to bear another child. If one applies this to an increase in the household's disposable income through child care subsidies, a monthly decrease of 200,000 won in child care expenditures (or the same amount of increase in monthly income) is estimated to raise the intention to have another child by approximately 3 percent.

One prerequisite for ensuring the effectiveness of the government's current child care policy aimed at directly decreasing household expenditures on child care is that the expansion of governmental support for child care in practice must lead to an actual reduction in a household's financial burden of child care-related costs. Even with the government providing free child care

services, the amount of money that parents are required to pay may not in fact decline significantly due to child care facilities turning to questionable measures for securing additional fees. Unless parents witness a considerable reduction in the actual share of their burden, it is difficult to expect such policies to effectively boost fertility rates. In order for the child care subsidies to lead to an actual reduction in child-rearing costs, the additional income stemming from the government's financial support should not be spent on improving the quality of the care provided to existing children. However, there is the possibility that parents perceive the extra income from the expansion of the governmental support as money purposed for existing children, separate from other general forms of income which can be used for any purposes. That is, there is the chance that they will spend the money saved on child care tuition on additional private education courses. As predicted in the Quantity-Quality Trade-off Model (Becker, 1960), if the additional income generated from the government's child care support is utilized to improve the quality of the education of existing children, it is highly likely for such policies to not in actuality bring about the desired effect of raising the country's birthrate.

Child care policies aimed at directly reducing child rearing costs are expected to go only so far in addressing the factors causing women to avoid childbirth, failing to raise the country's fertility rate by any significant margin. The current policies focusing on a reduction in child care costs might play only a limited role in boosting the national birthrate since such assistance covers only a small fraction of the developmental stages of a child. Households avoiding childbirth for economic reasons do not feel pressured by the projected costs for early childhood, but they do feel pinched by the expected expenditures required in the later stages of childrearing, a significant proportion of which consist of private education fees. The 2012 National Survey on Fertility, Family Health and Welfare in Korea by the Korea Institute for Health and Social Affairs (KIHASA, 2013) estimates the average cost of raising a child from birth to college graduation to be approximately 389.6 million won. A closer look at childrearing costs by the child's life cycle reveals that the expenditures generated during the child's infant and toddler years account for only 20 percent of total costs. The average cost is calculated by factoring in only basic items. Therefore, if one takes into account additional costs, including those generated when a

child requires an additional year or more to gain acceptance into a university, simply takes time off during college or the expenses incurred for marriage, the aforementioned proportion would shrink further to below 20 percent.

As described above, the costs generated during early childhood account for only a relatively small fraction of total child rearing costs. Given this, the proportion provided in the form of government financial support within the total average cost is even smaller. For children who consistently use child care facilities from age zero to five, the aggregate subsidies provided during this period reach approximately 20.24 million won (as of 2013).¹⁰⁾ As for those who do not use such institutions at all during this same period, the maximum child care allowance provided during the aforementioned span amounts to 9 million won.¹¹⁾ In cases where a household is provided with either of these benefits according to the child's age, the aggregated amount of state child care support received by the household would lie somewhere between the maximum amount of the child care allowance (9 million won) and that of child care subsidies (22.04 million won). Comparing the aggregated amount of state benefits as calculated above with the total childrearing costs estimated by KIHASA (2013), one can conclude that the total amount of child care allowances provided during a child's infant and toddler years accounts for only 13.3 percent of the total costs (when considering the child's personal costs only, 26.6%) and that the maximum amount of 20.24 million won provided as child care tuition subsidies amounts only to approximately 30 percent of the total childrearing costs (when considering the child's personal costs only, approximately 60% of the total).

Given the observations presented above, it can be stated that the financial support for child care costs during a child's infant and toddler years are insufficient for elevating the national birthrate by a significant margin. In order to enhance the effectiveness of such policies, support should be provided over

10) Age 0: 394,000 won * 12 = 4,728,000 won, Age 1: 347,000 * 12 = 4,164,000 won, Age 2: 286,000 won * 12 = 3,432,000 won, Age 3-5: 220,000 won* 12 = 7,920,000 won.

11) Age 0: 200,000 won * 12 = 2,400,000 won, Age 1: 150,000 won * 12 = 1,800,000 won, Age 2-5: 100,000 won * 12 * 4 = 4,800,000 won.

a longer period of time and proactive efforts should be made to connect the aforementioned financial child care support policies with other labor market-related policies in order to assist working mothers as they attempt to strike a balance between work and family, including promotion of parental leave and flexible working hours. Even though the financial burden of childrearing is one of the important factors contributing to lowering the birthrate, the increasing number of unmarried women or those deferring marriage due to improvements in female educational levels and participation in the labor market is estimated to be bringing down the fertility rate. Therefore, the government should shift away from the economic approach to the fertility issue through which it has attempted to enhance birthrates simply via financial incentives.

V

Conclusion

This study carried out a thorough analysis regarding whether the current governmental child care policies are designed in such a way as to achieve their intended effects and then discusses in what direction future policies should be focused. In recent years, the government has dramatically expanded its support for child care out of the fear that the country's decreasing working-age population, under the sway of record low fertility rates and rapid aging, would pose a grave threat to future economic progress. In an attempt to boost the national birthrate and female participation in economic activities, the government has emphasized the enhancement of state responsibility for child care as the ultimate goal of its policies, and the core of such policies is the relaxation of the parental burden of childrearing through the provision of child care subsidies and a child care allowance. In 2012, the provision of free child care services began for children of determined ages, but in 2013 it was expanded to cover all children aged zero through five. The child care allowance, which was initiated in 2009 among marginalized households with infants or toddlers who do not attend child care centers, was expanded to cover all children aged zero to five starting from this year.

Currently, due to the brief period of implementation, it remains too early to evaluate whether the provision of free child care services is bringing about its intended result. In particular, when it comes to the policy goal of enhancing the birthrate, it is difficult to measure where the country stands since the nature of the processes involved in having a child obstructs the public in responding instantaneously to such policies. Therefore, evaluation should be conducted from

a long-term perspective. Of course, any comprehensive evaluation of child care policies should be pursued from a long-term view, but the current approach to child care-related policies is not deemed the best design for raising the birthrate and promoting female participation in economic activities. There is a need to determine whether the social benefits resulting from the current child care-related policies justify the enormous fiscal outlay, which exceeded 8 trillion won this year alone, along with what improvements should be undertaken in order to maximize the efficiency of the spending under the current circumstances in which maintaining fiscal soundness is a top priority.

First, this study concludes that it is difficult to effectively expand the female workforce only through the existing child care policies that prioritize financial support for users over the establishment of infrastructure for quality child care services. As observed above, most working mothers who elect to quit their jobs for childbirth and child rearing reasons make this decision mainly because they feel they have no place to turn to for trustworthy child care, not because they feel restricted by the costs of child care facilities. The empirical analysis in this study, in which the PSKC is utilized to analyze factors affecting the supply of female labor among women after childbirth, shows that the level of satisfaction with a proxy care giver or child care facilities is a major factor impacting the employment of married women after childbirth. Those who are satisfied with their surrogate care giver or child care institution are 21.6 percent less likely to drop out of the labor market following childbirth compared to those who are not. The findings of this study regarding child care policies as currently implemented indicate that raising the satisfaction level with the use of childcare facilities is essential in order to minimize the career discontinuity of women due to childbirth and to maximize the utility of the female workforce to its fullest. Quality child care infrastructure is a prerequisite for ensuring that reductions in child care costs, the focus of the current system, result in an increase in female labor participation.

Also, it appears that the current design in which an equal amount of support is provided to employed and unemployed mothers is ineffective in terms of increasing the female labor pool, even though it does seem fair from the perspective of universality. Of course, unemployed mothers should be allowed to use day care centers according to their individual needs, but it is difficult

to deny that there exists a considerable distinction between the two groups in terms of the necessity of and time of use of such facilities. It is difficult to find a rational foundation for the standardized provision of support for full-day use of nursery facilities regardless of the mother's employment status. With subsidies for full-day use in place, unemployed mothers may become more dependent on the service than is necessary, increasing the likelihood of moral hazard. This indicates that substantial child care resources are being wasted in the process of providing financial support to meet such fictitious demand. In addition, this demand for child care services increases the workload of nursery school teachers, which can in turn lead to a degradation of child care service. There even exists the possibility that teachers would show preference for children of unemployed mothers, since they remain at the institution for a shorter time compared to those of employed mothers. These factors can work against working mothers.

When considering only the goal of expanding the female workforce, it is difficult to find grounds for pursuing universality in setting the targets for support without regard for the mother's employment. In order to improve the efficiency of fiscal spending on child care-related policies, it is desirable to focus more on those who are in an inescapable need of child care facilities and provide child care subsidies accordingly. The fundamental reason for providing child care services is to deliver proxy care giving on behalf of parents who are unable to look after their children independently due to their employment, job-seeking activities, or other reasons. Therefore, it is desirable for support for child care services to be provided differentially depending on the individual needs of each household. As for infants in inevitable need of child care facilities due to developmental issues, the current system should be maintained; however, as for infants who are looked after mostly at home, subsidies for child care services should be provided only differentially depending on whether or not the mother remains employed. Support for full-day use of facilities should be limited to those households unable to care for their children at home due to the parents' employment or other reasons. In the case of infants of unemployed mothers, more aggressive efforts should be made to find ways to promote alternative child care support systems, including support for half-day or part-time use.

Along with the promotion of the female labor supply, another goal of Korean child care policies is to raise the national birthrate by bringing down the direct costs of child care. In order to predict the influence of child care policies on fertility rates, the empirical analysis of this study estimated the effect of household income on the intention to have another child among households with one infant or toddler. The reason for noting the effect of income on this intention is that the primary goal of child care policies is to increase household income. The results of this analysis show that household income does have a positive correlation with the intention to bear another child, and this tendency is observed to be especially strong among the households with a lower income. Among households in the lower income bracket, the correlation is estimated to be that an increase in monthly income of 200,000 won thanks to child care cost subsidies leads a household to be approximately 3 percent more likely to have such an intention. However, this result needs to be interpreted only within certain limits since it is based on the assumption that the government's child care cost subsidies do in fact lead to a reduction in household expenditures on child care, resulting in increased disposable household income.

As observed above, there is a chance that a decrease in child rearing costs thanks to child care cost support would result in improvements in the national birthrate. However, it is difficult to expect a significant increase in the birthrate only through such financial support policies. First, a prerequisite for ensuring that the reduced costs for child care lead to a higher birthrate is that the actual burden the household bears due to child rearing costs must decrease. Despite the expansion of free child care, the effect of reduced costs as perceived by parents is negligible. Even though the government's subsidies for childcare service fees cut the nominal costs for child care, the actual expenditures by parents have not declined considerably due to some child care centers raising fees for extracurricular activities and others through more questionable methods. Second, a necessary condition for ensuring that the benefits are translated into a reduction in child care costs is that the extra income (or reduced expenditure) is not spent on improving the quality of care for existing children. As estimated in the Quantity-Quality Trade-off Model (Becker, 1960), if such additional income generated by the governmental is spent on enhancing the quality of care provided to existing children rather than on having additional children, the state

benefits are highly likely not to have any positive effect on the fertility rate.

A significant effect of governmental child care subsidies on fertility rates cannot be expected, since such subsidies cover only a small fraction of child rearing phases and the enhancement of the birthrates can be ensured only when the relaxation of not only direct costs, but also indirect costs is pursued. Since the 2000s, many advanced countries have observed a positive correlation between female participation in economic activities and fertility rates. This is a result of those nations attempting to not only reduce the direct costs of childrearing through child care policies, but also relaxing the indirect costs stemming from childrearing, including career discontinuity and loss of income through family-friendly policies assisting women in striking a balance between work and family. In the aforementioned countries, promotion of parental leave, high levels of pay provided during child care leave and flexible working hour policies have all contributed considerably to reducing the indirect costs of childrearing. These examples demonstrate that the provision of free child care services and increased child care allowances are only a starting point and that real-world effects with a greater impact can be ensured only when child care policies and labor policies are interwoven in such a way as to establish an infrastructure for quality child care services and assisting women in balancing between family and work.

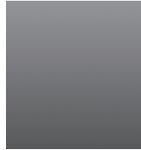
Finally, this study proposes that priority should be provided to the qualitative improvement of child care infrastructure, followed accordingly by aggressive fiscal spending. Parents are not simply seeking cheaper child care services, but prefer quality service. However, only a negligible proportion of the related budget is being allotted to improving the quality of child care facilities from a long-term perspective. Without quality services, the current child care policies focused on a reduction in fees can reach only halfway. Considering that infants and toddlers spend considerable time in such facilities due to increased female participation in the workforce and improved access to services, the quality of child care services is directly related to the healthy development of the children, as well as to the progression of the human capital of the nation as a whole. The controversy surrounding the quality of child care services continues primarily due to the private sector-oriented supply system, but this is not the end of the story. High-quality services cannot be provided due to

a combination of various factors, including price regulation through price ceiling policies, a lack of competition between facilities stemming from government intervention to limit supply, information asymmetry regarding the quality of facilities and lax governmental supervision. While developed countries with advanced welfare policies have focused on the establishment of infrastructure for quality public child care services, the Korean government has failed to manage quality of service, focusing only on the quantitative expansion of child care facilities over a short period of time.

As stressed above, the proposed goals of the free child care policy as currently implemented by the government will be delivered only when it is combined with the provision of quality child care services. Once in place, welfare spending is difficult to reduce due to its irreversibility. Child care cost subsidies and child care allowances have already been expanded to cover all children of a certain age group. Therefore, in order to achieve the initial goals of child care policies, when a change in policy direction is made and additional resources are allotted in the future, it will be high time to establish a clear philosophy based upon which priorities have been identified.

References

- Becker, Gary, "An Economic Analysis of Fertility," in A. J. Coale (eds.), *Demography and Economic Change in Developed Countries*, Princeton University Press, 1960.
- Choi, Hyo-mi, "Characteristics of Childbirths in Korea Observed in KLIPS and Women's Labor Market Participation after Childbirth," *Monthly Labor Review*, Korea Labor Institute, July issue, 2006, pp. 77-86.
- Choi, Joonook and Heon-jae Song, "Effectiveness and Redistributive Effects of Policies to Raise Fertility in Korea," Korea Institute of Public Finance, 2010.
- Jin, Woo Seok, "The Effect of Pro-natal Policies on the Fertility, Labor Supply, and Marriage of Korean Women," *Journal of Korean Economic Analysis*, Vol. 3, 2008, pp. 55-105.
- Kim, Hyeon-suk and Jong-Hak Weon, "Female Workforce Supply and Public Finance Policy: Focusing on Child Care Costs," Korea Institute of Public Finance, 2004.
- Kim, Ji-kyeong and Yoo-hyeon Cho, "Analysis of Married Women's Return to the Workforce Following First Childbirth," *The Korean Labor Economic Association*, Vol. 26 No. 3, 2003, pp. 181-207.
- Kim, Jeongho and Seok-cheol Hong, "An Analysis of the Effect of Child Care Costs on Women's Labor Force Participation and Fertility," Third Chapter of *Controversy on Child Care Policy and Missions to Pursue* (pp.43-75), Compiled by Hyeon Jin-gwon, Korea Economic Research Institute.
- Kim, Jeongho, "Workplace Childcare Centers and Women's Employment," commissioned by the Korea Institute of Public Finance, 2012.
- Lee, Haywon, "The Effects of Child Care Support Policy on the Relaxation of the Financial Burden of Child Care Costs," *Monthly Public Finance Forum*, June, 204th issue, Korea Institute of Public Finance, 2013.
- Ministry of Health and Welfare and Korea Institute of Child Care and Education, 2009 National Survey on Child Care, 2009.
- Ministry of Health and Welfare and Korea Institute of Child Care and Education, 2012 National Survey on Child Care, 2012.
- Ministry of Health and Welfare, Childcare Programs (annual).
- OECD, *Doing Better for Families*, 2011.
- OECD, *Family Database*, 2012.
- OECD, *Labor Force Statistics Database*, 2011.
- OECD, *Starting Strong II: Early Childhood Education and Care*, OECD, 2006.
- Seo, Mun-hui and Hye-jin Kim, "2012 Child Care Policy: Achievements and Mission," Korea Institute of Child Care and Education, 2013.
- Shin, Yoon-Jeong, "An Analysis of the Effect of the Burden of Childcare and Education on Childbirth," *Health and Social Affairs*, 28 (2), 2008, pp. 103-134.
- Korea Institute for Health and Social Affairs, *2012 National Survey on Fertility, Family Health and Welfare in Korea*, 2013.



Abstract

A Study on the Effectiveness of Child Care Policy in Korea

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Public spending on early childhood care and education in Korea rapidly increased since the late 2000s. In particular, government subsidy for child care, originally a selective benefit targeted to lower-income families, expanded over time to become a universal benefit. Starting from this year, all children under the age of five are eligible for free child care, regardless of family income. Considering that the size of public expenditure on early childhood care and education in Korea had been relatively small compared to other OECD countries, increased government support for young children, particularly the so-called “Free Child Care Policy,” can be seen as a movement in the right direction. Yet, there remains a wide debate on the effectiveness and sustainability of the policy over the long term.

The main goal of increased government support for child care is to provide good quality child care at an affordable price. While the primary beneficiaries of the proposed policy are children, a well-designed policy can also have the additional benefit of promoting fertility level as well as female labor participation. Facing unprecedented low fertility level and relatively low female labor participation rate compared to other OECD countries, the Korean government aims to utilize child care policy as an important policy tool to promote both the fertility level and female labor participation rate. This study

aims to investigate whether the current policy scheme is optimally designed to deliver its proposed goals and suggest possible policy recommendations.

The study is organized as follows. Section II explains the rationale for government intervention for early childhood care and education, and discusses several major issues stemming from the current free child care policy. Section III illustrates the effectiveness of child care policy in promoting female labor participation, and Section IV examines the effectiveness of child care policy in raising fertility.