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Analysis and Evaluation Research on Korean Gender Budgeting and Accounting System (I)

: Ways to Increase the Effectiveness
of Fiscal Projects through Gender
Budgeting System

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I. Overview

1. Purpose

The gender budgeting system in Korea is well established legally and institutionally despite its short history, however it doesn't necessarily guarantee gender equality in the society. On the occasion of 7th anniversary of implementation of the gender budgeting system, therefore, it is necessary to evaluate the progress and outcome of the gender budgeting system in a systematic manner.

In order for a sustainable development of gender budgeting, a mid-to long-term road map and its performance indicators were

developed in 2014 (Duck-Hyun Ryu et al., 2014). Based on which, this research was conducted in consideration of several changes in situations around the gender budgeting system. As a matter of fact, improvement plans for low achieving gender budget projects in areas where gender equality was low or getting lower were presented based on the results of deliberation of gender budget balance sheets by the National Assembly.

However, no empirical research was conducted to verify the effects of the gender budgeting system. Therefore, it is meaningful that this research was conducted to verify the effects and improve the effectiveness of the gender budgeting system to ensure its sustainable development.

2. Methodology and key contents of research

A. Methodology

First of all, a literature review was conducted to analyze the effects of the gender budgeting system. We collected and analyzed existing literatures including research materials and reports regarding the effects of financial programs and gender equality-related systems.

Second, we conduct an econometric analysis using the structured numeric data of national gender budget statements and balance sheets which were prepared as legal documents and submitted to the National Assembly from 2010.

Third, we analyzed the survey of public officials' opinion for the advancement of gender budgeting.

Fourth, we interviewed domestic and overseas experts and interested parties or stakeholders. In particular, diverse opinions were collected

as part of macro- and micro-effect analysis and incorporated into this research. In addition, a visit to the European Parliament (Policy Department for Citizen's Rights and Constitutional Affairs) and Belgium was an opportunity to share with related experts and further improve the advantages of the gender budgeting system.

Fifth, we performed a joint research with industrial, academic and research communities. The results of the joint research are partly included in Chapter II and Chapter III of this paper. Chapter II includes the results of a joint research with Ewha Womans University on gender equality, and Chapter III addresses the results of a joint research with the Korea Association of Public Finance which has shown excellent research performance in the national financial area.

B. Key contents

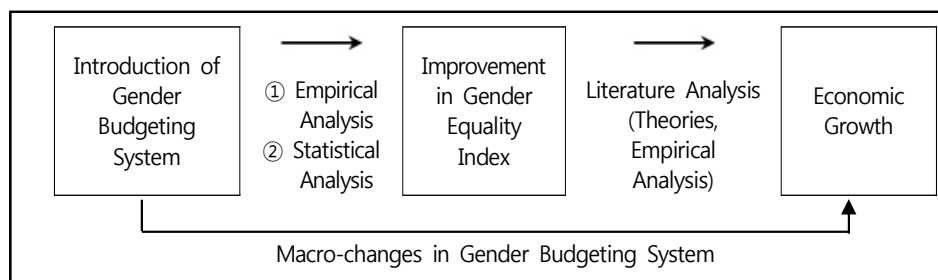
This research focuses on measuring the effects of the gender budgeting system from the macro and micro aspects.

First of all, we address a macro-analysis of the effects of the gender budgeting system in the chapter II. This analysis was made to find out whether the gender budgeting system contributed not only to gender equality but also to economic development and growth in the mid-to long term. In the chapter III, we explain a micro-analysis of the effects of the gender budgeting system. We analyzed the impact of the gender budgeting system on the projects with gender budget statements via project suppliers and consumers. Lastly in the chapter IV, we suggest several ways to advance the gender budgeting system based on the results of this research.

II. Macro-analysis of the Effects of Gender Budgeting System

1. Basic model

The ‘effects of the gender budgeting system’ from the macro aspect is defined as reducing gender inequality and becoming relevant to economic growth after the gender budgeting system was implemented. The basic model for this analysis was as follows:



[Figure 1] Basic Model for Macro-analysis

2. Review of literatures on gender equality and economic growth

A. Research on theory

The researches in theory on the relevance of gender equality to economic growth focused on the impact of accumulated human capital (level of education or gender equality) on economic growth, and clarified that females were a significant part of human capital (OECD, 2013). For example, it was revealed that on average in OECD countries, a 50% reduction in gender inequality in labor force participation rate led to an annual average increase of 0.3%p in per-capita GDP. Such researches on theories were based on the

growth model of the neo-classical school and mostly defined a negative relationship between gender discrimination and economic growth.

B. Research on empirical analysis

In most cases, researches on empirical analysis showed a positive relationship between gender equality and economic growth. In the other hand, there were some researches indicating that the gender gap becomes wider due to rapid economic growth.

When taken all together, however, it can be concluded that it is necessary to improve gender equality in order to increase growth potential. It is also worth to note that not only absolute women empowerment but also relative women empowerment is significant for economic growth.

3. Gender budgeting system and gender equality index

A. Countries with gender budgeting system and its relationship with GGI and GDP

We conducted both a cross sectional analysis and panel analysis to look at changes in Gender Gap Index (GGI) following the introduction of gender budgeting system so as to determine whether the gender budgeting system contributed to improving gender equality. A data set was created using data from World Bank, World Economic Forum, and OECD Gender Portal.

The cross sectional analysis was conducted for the period from 2004 to 2013. A dependent variable was $\Delta GGI^{1)}$ (discrepancy of CGI

1) GGI (Gender Gap Index) is a gender equality indicator of WEF (World Economic Forum).

during the period of 2005 to 2014 for OECD countries and from 2006 to 2014 for non-OECD countries) and explanatory variables were an average growth rate of GDP and adoption of the gender budgeting system. As a result of analysis, it was found that the gender equality index in the countries with per capita GDP of more than USD 3,000, in the OECD countries, and in the non-OECD countries increased further with the gender budgeting system in place compared to countries with no gender budgeting system in those groups.

The panel analysis was conducted for the period from 2000 to 2014 for OECD countries and from 2006 to 2014 for non-OECD countries. A dependent variable was GGI and explanatory variables were GDP and adoption of the gender budgeting system. The analysis was made using a pooled regression model, a fixed-effect model and a random-effect model. The result of analysis showed that, regardless of the models, the gender budgeting system increased the gender equality index in OECD countries. It was also proved that the gender budgeting system had a positive effect on GDP. The same result was obtained for non-OECD countries, however it was difficult to place much weight on it because only 20% of non-OECD countries had the gender budgeting system in place.

B. Changes in gender equality index following introduction of gender budgeting system in Korea

We made an analysis of changes in the National Gender Equality Index²⁾ made after 2010 when the gender budgeting system was

2) The National Gender Equality Index was developed by Ministry of Gender Equality and Family (MOGEF) in 2009 to measure the level and trend of

adopted in Korea. By doing so, we were able to identify a relationship between the gender budgeting system and the National Gender Equality Index. We created a data set by matching eight areas of the National Gender Equality Index with seven areas of gender budget statements, and analyzed a relationship between the project budget (X) and the National Gender Equality Index (Y) for each area. The result of analysis using scatter plots is as follows:

〈Table 1〉 Relationship between Areas of Gender Budget and Gender Equality Index

Gender Equality Index	Areas of Gender Budget Statements	Relationship
Economic Activities	Improving the economic empowerment of women	+
Education and Occupational Training		
Decision Making	Improving the representativeness and expanding the participation of women	+
Welfare	Improving the welfare and right to health of women and family	+
Public Health		
Safety	Eliminate violence against women and guarantee the human rights of women	-
Family	Provide a parenting support and lay a foundation for a balance between job and family	+
Culture & Information	Spread gender awareness and culture	+

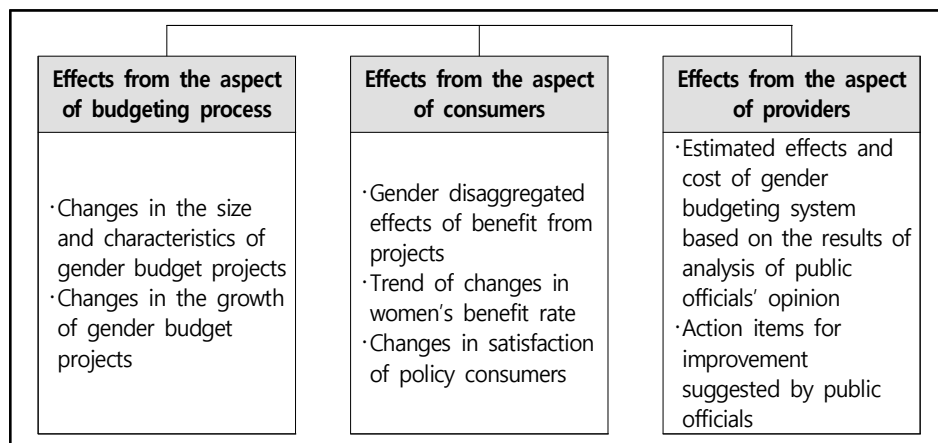
* Out of seven areas of the gender budget statements, 'Improving capability and accountability for gender equality policy' had no matching project against eight areas of the National Gender Equality Index.

gender equality every year. The purpose of the index is to analyze changes in level of gender equality and causes for gender inequality for each area so as to reduce gender inequality. The index was developed and announced pursuant to Article 19 of Gender Equality Act.

III. Micro-analysis of the Effects of Gender Budgeting System

1. Basic model

We performed a micro-analysis with an idea that changes in the way finance was managed following adoption of the gender budgeting system could have direct and indirect impacts on people in economic, social and institutional areas. The units of analysis were financial projects (budgeting process), project consumers (project beneficiaries) and project suppliers (concerned public officials).



[Figure 2] Basic Model for Micro-analysis

2. Effects from the aspect of budgeting process

A. Size and characteristics of gender budget projects

The effect of gender budgeting system on allocation of available resources in the economy primarily appears in the government budgeting process. It is natural to allocate more resources to financial projects

and social investments with higher gender equality effects when the government values gender responsive budget in the budget compilation process. It also affects the resource allocation of the private sector from the mid-to long-term, which facilitates the gender responsive allocation of resources both in the public and private sectors. Therefore, the key point in the analysis of effects of gender budgeting system from the economic aspect was to identify changes made in the size and composition of budget for gender budget projects after the gender budgeting system went into effect.

To this end, gender budget statements from 2010 to 2015 were developed into a database and gender budget statements were matched for each year, project, and organization. Then, an analysis was made of how the budget size and breakdown of fiscal projects were changed.

B. Gender budget projects from 2010 to 2015

1) Project growth

The number of gender budget projects increased from 199 in 2010 to 378 in 2015 and the amount of gender budget grew by 3.56 times from KRW 7.3 trillion in 2010 to KRW 26.1 trillion in 2015.

2) Yearly changes in major budget projects

We took a look at 10 major gender budget projects based on the amount of budget so as to identify the characteristics of gender budget projects. The 10 major projects in the 2015 gender budget statements belonged to Ministry of Health and Welfare (MOHW), Small and Medium Business Administration (SMBA), and Ministry of Employment and Labor (MOEL). In addition, 10 major projects

for the past five years belonged mainly to MOHW, MOEL, SMBA, and Ministry of Education (MOE).

The project with the largest amount of budget in the gender budget statements from 2010 to 2015 was the Basic Old-age Pension Payment (renamed into Basic Pension Payment in 2015) project of MOHW. The budget of the project amounted to KRW 7.6 trillion in 2015, accounting for 29.1% of the total gender budget. Even during the period from 2010 to 2015, the project accounted for 23% to 37% of the total gender budget of each year. The ‘Infant Child Care Subsidy’ project of MOHW took up the second largest amount of budget with KRW 3 trillion in 2015, accounting for 11.5% of the total gender budget. For the past six years, the amount of budget allocated to the project reached 22.3% in 2010 and afterwards it shrunk gradually.

C. Project size and its trend

1) Change and distribution of project size

The average budget to individual projects was KRW 68.9 billion in 2015, which continuously grew after 2010. The median value for individual projects in 2015 was KRW 3.28 billion, very much smaller than the average budget to individual projects. It was in the increasing trend for the past four years, however, went down slightly in 2015. When it comes to quartile, it was shown that the distribution of the budget was very asymmetrical and some large projects took the lion’s share of the total budget. It was evident that the distribution of budget was skewed-to-the-right and the asymmetry has recently grown, which suggests that the trend of concentration of the budget on several major gender projects has recently accelerated further.

2) Gap and concentration of project size

We used the Inter Quartile Range (IQR) and Concentration Index (CI) to look at the difference and concentration of the budget for gender budget projects. The higher the IQR value is, the wider the distribution of the budget is, which means a large difference in the budget among gender budget projects.

The IQR in 2015 was KRW 14.783 billion based on the budget and it was in the upward trend until 2015, however dropped by KRW one billion in 2015 from the previous year.

The CI in 2015 was very large 0.9188 which implied that the gender budget concentrated on several projects. For the past six years, the CI went down from 0.9166 in 2010 to 0.8983 in 2013 and up again from 2014.

〈Table 2〉 Concentration of Gender Budget

(IQR Unit: KRW million)

Item	2010	2011	2012	2013	2014	2015
IQR	8,958	10,503	11,562	11,841	15,971	14,783
Concentration Index	0.9166	0.901	0.8930	0.8983	0.9095	0.9188

* Data: Analysis was made of structured data of gender budget statements from 2010 to 2015 and gender fund management plan from 2011 to 2015.

D. Types of gender budget projects

1) By organization

We examined the characteristics of gender budgeting system from the aspect of operating organization using the number of gender budget projects distributed to the government bodies. It was confirmed by the result of analysis that the government bodies

which were directly and highly related to employment and welfare managed the relatively larger number of gender budget projects. Among 378 gender budget projects in 2015, Ministry of the Gender Equality & Family (MOGEF) was responsible for 54 projects which accounted for 14.3% of total gender budget projects. MOGEF was in charge of the largest number of the gender budget projects, which was followed by MOEL (44 projects, 11.6%) and MOHW (42 projects, 11.1%).

When it comes to the distribution of the budget to gender budget projects, MOHW took up the largest portion which was above the half of the total budget of gender budget projects (KRW 13.7 trillion in 2015, 52.6%). The portion that MOHW took up sharply dropped from 69.5% in 2010, suggesting that other government bodies raised gradually the budget for gender responsive projects. It was because that the selection criteria for gender budget projects was revised in 2010 which allowed more diverse projects in more diverse areas to be selected as target projects. MOHW was followed by SMBA (19.1%) and MOEL (14.1%).

The analysis of data on the number of projects and their budget for MOHW and SMBA showed that both of the government ministries took up a larger portion of the budget against the number of projects, which implies that the budget amount allocated to their individual projects was relatively bigger than that of other government organizations.

2) By accounting

In 2015, 60.3% of (228) gender budget projects were general accounting projects, taking up the largest portion of general

accounting budget. 26.5% of the gender budget projects were financed by funds and 13.2% were financed by special accounts.

E. Examples of effective management of gender budget

The first example is the incorporation of the results of gender impact assessment conducted pursuant to Article 9.2 of Act on Gender Impact Assessment into the gender budget. Among projects for which a gender impact assessment was performed, 107 projects were included in the gender budget statements for the fiscal year of 2015. Among them, 47 projects received the larger amount of budget in the next year with 32.9%p of average budget growth rate (excluding projects for sex offender notification, support for juvenile sex protection, and support for logistics expert cultivation). The figure was well above the government's average budget growth rate of 6 to 7%.

Secondly, high performing projects in terms of gender equality improvement from 2012 and 2014 were selected based on the results of 'effect analysis on gender equality' and 'self-assessment' which were part of 「Gender Budget Balance Sheets of the Fiscal Year 2014」. Included are 'Leading Farms Management and Cultivation' of Rural Development Administration, 'National Scholarship Programs for High Achievers' of Ministry of Science, ICT and Future Planning, and 'Cultivating Creative Talents for Convergence at Home and Abroad' of Ministry of Culture, Sports and Tourism.

3. Effects from the aspect of consumers

A. Gender-disaggregated benefits of policy consumers

The policy consumers of a gender budget project refers to policy targets that vary depending on projects. The ratio of female beneficiaries to female targets of all gender budget projects rose from 16.08% in 2010 to 19.07% in 2014. For continuous projects for which gender budget statements were prepared from 2010, the figure grew from 31.73% in 2010 to 45.61% in 2014. The growth rate of the ratio was 2.9%p for all projects, while it was 13.88%p for continuous projects (projects for which gender budget statements were submitted from 2010 to 2014), which suggests that efforts to increase women's benefit rate were made for gender budget projects under continuous monitoring.

The analysis of the budget per beneficiary showed that the budget per beneficiary of continuous projects was larger than that of total gender budget projects. The figure fell with the introduction of gender budgeting system and afterwards restored gradually. It means that, in the beginning stage of the gender budgeting system, the focus of preparation of gender budget statements was placed more on increasing the number of female beneficiaries rather than the amount of beneficiary budget.

A gap in gender-disaggregated benefits of total gender budget projects dropped slightly from 15.5% in 2010 to 15.2% in 2014. In the other hand, the number of the continuous projects fell from 9.0% in 2010 to 2.8% in 2014, indicating that the continuous projects were more effective in improving gender equality. In this light, the presence of continuous projects in the mix of gender

budget projects helped increasing the stability of budget formulation and the effectiveness of implementation of the gender budgeting system. It is, therefore, worth to note that it is very significant to prepare gender budget statements on a continual basis.

B. Changes in women's benefit rate using cross-sectional multi-level model

We analyzed changes in women's benefit rate made after the introduction of gender budgeting system, especially of the continuous projects. For the continuous projects, a five-year average benefit rate of women recorded at 48.55%. As a result of the fixed effects model, it was estimated that the women's benefit rate of 82 projects in the initial year (2010) was on average at 46.72% and with time, grew by 0.86%p on an annual average basis. According to the estimation of the random effects model, it also appeared that the growth of women's benefit rate varied from project to project. For a project with the highest growth rate, the women's benefit rate increased by an annual average growth of 5.5%p while for a project with the lowest growth rate, it decreased by 3.82%p on average every year.

Projects for women's economic empowerment started with a relatively lower benefit rate of women when the gender budgeting system was adopted, however the rate grew gradually over time. According to a mid-term financial plan, projects in the areas of public health, welfare and employment were incorporated into the gender budgeting system with a higher benefit rate of women, but saw the rate decreasing over time.

C. Satisfaction of policy consumers

We made an analysis of implementation of the gender budgeting system with focus on ‘Does the satisfaction of policy consumers grow when a project is conducted in a gender-responsive manner?’ and ‘What are the characteristics of projects with a higher- or lower-than average satisfaction level.’

Even though performance indicators were different depending on projects, most of the projects include gender-disaggregated benefit rate in their mix of performance indicators. However, there were some projects with the satisfaction of policy consumers as a performance indicator. A total of nine projects in the gender budgeting statement of the past 5 years had a performance indicator related to ‘satisfaction’ (1.6% of 551 projects). All of them belonged to MOHW and MOGEF and the satisfaction level of those projects increased continuously.

4. Effects from the aspect of providers

A. Survey of public officials’ opinion for the advancement of gender budgeting

In order to take a look at the effectiveness from the aspect of providers, a ‘survey of public officials’ opinion for the advancement of gender budgeting’ (hereafter survey of public officials’ opinion) was carried out. Through this survey, the effects of gender budgeting system (specific changes in awareness and behaviors of public officials who write gender budget statements) and cost (cost for preparation estimated based on hourly wage) were measured and their affecting factors were identified. The target of the survey was

defined as public officials who prepared a gender budget statement at least one time. When a panel data was created first time in 2014, the number of samples was 513 persons and decreased to 407 in 2015 with 79.3% of panel retention rate and new 46 samples.

B. Effects and cost of gender budgeting system

The gender awareness of those surveyed increased from 4.3 points prior to the gender budgeting system to 5.5 points in 2014 and 5.8 points in 2016. Those who had work experience on female policy and who prepared gender budgeting statements more times showed more positive changes in their gender awareness.

The understanding on the gender budgeting system changed from 5.9 points prior to preparation of gender budgeting statements and balance sheets to 6.2 points in 2014 and 6.4 points in 2015.

For conversation on gender equality, the score went up from 4.9 points in 2014 to 5.3 points in 2015. This rising trend was also true for conversation on gender budgeting system with 4.8 points in 2014 and 5.2 points in 2015.

When being asked whether to put projects of their organization in the perspective of gender equality, those surveyed gave 4.5 points in 2014 and 5.0 points in 2015. When asked whether to consider gender equality in the budgeting process including budget preparation and execution and project assessment after the gender budgeting system came into effect, 30 to 45% of those who were responsible for preparation of gender budgeting statements responded 'Yes' which was higher than those who were not.

With regard to Willingness To Pay (WTP), it can be interpreted this way that if WTP is estimated to be lower than 0, preparation

of gender budgeting statements is considered cost, while if WTP is estimated to be higher than 0, it is considered willingness to pay. As a result of analysis, the WTP of 27.4 to 32.3% of respondents was higher than 0, which indicated that approximately one third of respondents didn't think of preparation of gender budgeting statement as cost. Among groups of females over males, those who had work experience on female policy over those who not, and those who prepared gender budget statements more times, the ratio of respondents with higher-than-0 WTP was bigger. However, the confidence interval overlapped which made it difficult to say that the difference was significant. It was revealed that the more positive the awareness of gender budgeting system is, the more respondents with higher-than-0 WTP is significantly. Therefore, fatigue felt when preparing gender budgeting statements was more likely to be determined by awareness of gender budgeting system rather than by individual personality.

C. Areas for improvement in gender budgeting and accounting system suggested by public officials

It was appeared that public officials preferred self-control improvement (e.g. strengthening education and introducing incentives) rather than mandatory improvement (e.g. making the National Assembly's review on gender budget statements mandatory and adding items for self-assessment of fiscal projects).

When it comes to performance goals and basis of calculation for gender budget statements, it was expressed that public officials had difficulties in calculating quantitative targets, producing statistics which were necessary for basis of calculation, and setting



performance goals different from those in the performance plan. Additionally, there was an opinion that a specific guideline was needed for gender equality assessment and self-assessment of gender budgeting balance sheets.

IV. Policy Recommendations to Address Current Issues

1. Development of a guideline which includes criteria for selection of gender budget projects

Currently, attempts are made to associate the gender budgeting system with the gender equality index by using a ‘Checklist for Selection of Gender Budget Project’. However, organizations are arbitrary in selecting gender budget projects, which exposes a limitation in including projects with a wide gender gap into the gender budgeting system. In that sense, it is desirable to present a guideline for preparation of gender budget statements in a way to include projects with a low gender equality in the gender budgeting system.

2. Continuous monitoring of implementation of gender budgeting system and its relevance to gender equality index

It is also needed to establish a system to analyze and monitor the association with the gender budgeting system and the national gender equality index continuously so as to allow concerned organization to make improvement in index and budget areas with a low gender equality level. Furthermore, it is recommended to analyze gender equality level in the assessment of gender budget balance sheets and incorporate the analytical results into the gender budget statements of next year.

3. Development of performance indicators specific to gender budget project type and expansion of scope of gender budget projects

Performance indicators specific to individual gender budget projects should provide an information on how to measure and manage the achievement of gender equality goals as well as what and how an organization and its members do to achieve performance goals.

Performance indicators can be classified into three categories: firstly quantitative and qualitative indicators, secondly, organization performance indicators and project performance indicators and thirdly, input indicator, process indicator, output indicator and outcome indicators.

In order to expand the scope of gender budgeting projects, it is recommended to develop a specific plan to set performance indicators, in other words, gender equality indicators for each category above mentioned.

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