

Earnings Quality of Firms Selected as the Global Champ Project[†]

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〈요 약〉

This study aimed to examine earnings quality of firms selected as Global Champs project which has been promoted by the government since 2013 to support small and medium sized enterprises, for the screening year(t-1) and selected year(t). Earning quality is measured as the value of discretionary accruals estimated by Dechow et al.(1995) adjusted Jones model and Kothari et al.(2005) model, respectively.

I analyze the differences of earning quality between the Global Champ firms and the paired firms selected through criteria of the similar total assets and the same industry in the screening year and the selected year. This study is motivated by the needs of measurement of the performance of the Project from the accounting transparent point of view.

As the results of this study, major findings are summarized as follows. Firstly the earnings quality of the selected firms was lower than that of the paired firms. This can be explained as a result of motivation of earnings management by companies eager to meet the requirements to be selected for the Project. Secondly, in the selected year, the earnings quality was proved to improve, comparing to the screening year.

This can be explained by the efforts of companies to reinforce management innovation and transparent management, which in turn led to positive effects on the earnings quality. These findings were found to be consistent in the additional analyses, where the earning quality of the reconstructed sample with only selected companies was compared for the screening year and the selected year, based on the year before the screening year(t-2).

Key Words: Global Champ project, discretionary accruals, earning quality

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I. 서론

To promote hidden champions among Korean enterprises, the Ministry of Trade, Industry and Energy, and the Ministry of SMEs and Startups have launched World Class 300 project since the year 2011. The allocated budget for the year 2018 is 108.9 billion Korean won for research and development costs and 14 billion Korean won for international marketing costs, and a total of 28 companies are supposed to be selected among the applicants. (In announcement 2018-27, the Ministry of SMEs and Startups Announcement 2018-20, January 17th, 2018).

The common required qualification for World Class 300 is, as small and medium sized enterprises, to have achieved last year's sales profit, which is ranged 40 billion to 1 trillion Korean won. (However, companies in software, engineering and design industries can have profits, ranged from 10 billion to 1 trillion Korean won.) If a company meets the common required qualification and belongs to at least one of the requirement conditions requested by World Class 300 project standard¹⁾ or the Global Champ Program, it is qualified to apply. The Global Champ track is applicable for enterprises²⁾ which have at least once achieved \$20 million ~ \$1 hundred million of direct export in the recent 3 years.

The applicants submit their growth strategy plans where they propose visions, strategic goals for the next 5 years and strategies in different topics such as export growth strategies, technology strategies, investment strategies, business innovation and recruitment strategies to KIAT (Korea Institute for Advancement of Technology), which would review the submitted plans. Based on the submitted growth strategy plan, the committee comprised of experts including professors and certified public accountants go through top to bottom in-depth evaluation and make final selections.

The enterprises appointed as the World Class 300 get supports in development of core application technology from KIAT, establishment of R&D business patent strategy from KISTA (Korea Intellectual Property Strategy Agency) and support of customized overseas marketing from KOTRA (Korea Trade-Investment Promotion Agency). As well, as a promotion to related support programs, the appointees gain extra design points in Global Growth Champion Program of KIDP (Korea Institute of Design Promotion), extra points in support program for human resources in technology innovation of NST(National Research Council of Science and Technology), and extra points in the Trade Champ of KSURE(Korea Trade Insurance Corporation).

In the previous research about the World

1) The program track for general enterprises requires the enterprises' export proportion to the total sales to be more than 20% and R&D costs to be 20% in the recent 3 years, or annual growth rate for sales to be more than 15% for the last 5 years. The program track for innovation enterprises requires the enterprises' export proportion to the total sales to be more than 10%, and R&D costs to be at least 4% in the recent 3 years.

2) The enterprises whose export sales is less than 50 million dollars should have the export growth rate more than 5%.

Class 300 project by Gong Kyung Tae (2017), the earnings quality of enterprises selected as World Class 300 was lower than those of the paired group. There was no significant difference in earnings quality for the screening year, but earnings quality was improved for the selection year. Additionally, in the additional analysis with the other sample reconstructed only with selected enterprises, there was no significant difference between the screening year and the year before the screening year, but the earnings quality was reported to have improved in the selection year.

Based on the findings from previous research, in 2018, South Korean government started to operate management by objectives, where the performance objectives on annual sales, exports, investments in R&D, and market diversification for the 5 years are monitored and managed. Specifically, accomplishments of objectives are monitored every 2 years, and for the companies which do not show satisfactory progress appointment can be annulled. The enterprises which do not meet goals in the growth strategy achievement and progress evaluation in the 5th year, the support would no longer be provided.

This research compares the evaluated years' and selected years' earnings qualities of the selected companies in the Global Champs Program and that of a paired sample, as the research tries to build upon the previous research by Gong(2017). Additionally, the changes in the earnings qualities of the screening year and the selection year are

compared.

The Global Champ Project is applicable for firms which have ever achieved \$20 million ~ \$1hundred million of direct export in the recent 3 year. The World Class 300 Project is for firms, of which export proportion to total sales is more than 20 % and average R&D cost is more than 20 % for the recent 3 years or compounded average growth rate of sales is more than 15% for the recent 5 year. This study is very distinctive as compared the previous research because it is performed to investigate whether different requirements to be selected for the Project could affect earning quality of the selected firms.

The structure of this research is as follows. In chapter 2, the literature review is covered and hypotheses are proposed. In chapter 3, the research design is presented and in chapter 4, the results from the empirical researches are summarized. In chapter 5, research implications, discussion and conclusion are presented

II. Literature Review and Hypotheses

The previous research on World Class 300 project is only done by Gong Kyung Tae(2017). This research aimed to observe the differences in the earnings quality of the

evaluated year and selected years of the enterprises selected in World Class 300, a project launched since 2011 by the government. The discretionary accruals, one of the elements that make up the earnings quality, was selected as a proxy for earnings quality and the earnings of the companies selected as World Class 300 were analyzed in terms of their earnings quality.

In specific, the positive effects of the efforts, which were invested by companies to establish technology, expand the amount of exports and reinforce investments, business innovation and recruitment in order to pass the evaluation in the Global Champs project and seek actual growth during the program, on the earnings quality were analyzed.

Moreover, the negative effects of the qualifications of the program, which the program track for general enterprises requires direct or indirect export proportion to the total sales to be more than 20% and R&D costs to be 2% in the recent 3 years, or average compound growth rate for sales to be more than 15% for the last 5 years, and negative effects of the burden on the selected firms, struggling to meet the future goal performances proposed in the growth plan after being selected in the program, about the earnings quality were analyzed.

The accruals quality is obtained by measuring discretionary accruals using the adjusted Jones model proposed by Dechow et al. (1995) and the ROA controlled model by Kothari et al. (2005). One interesting to notice

in this research is that it compares the earnings quality of the sampled companies selected in the program and paired companies, and it conducts comparative analysis of earnings quality at the screening year($t-1$) with the earnings quality at the selection year (t).

The summary for the main findings is as follows. First, the selected companies in the World Class 300 were observed to have lower earnings quality compared to the paired companies. This is because the earnings management incentives of the selected companies to achieve the evaluation criteria to pass the evaluation had negative impacts on earnings quality. Second, in the selected year, the earnings quality of the selected companies seemed to improve compared to the prior to selection. This can be explained by the positive effects caused by the managements' efforts to reinforce business innovation and establish transparency in operations following the selection. This result remained consistent in the additional analysis where the sample was reorganized only with the selected companies and the earnings quality of the companies were compared at evaluated year and selected year.

The companies who applied for the Global Champs Track conditionally also go through the same procedures as the selected companies in the World Class 300 program. The Global Champs Track makes announcement every year in February accepts applications until the beginning of March. The qualification assessment and industry evaluation process is

done during April and site visits and a complete evaluation is conducted in May. The final appointees are announced in June. The applicants are required to present stable finances so the debt ratio cannot be more than 500% consecutively in the past 2 years. Moreover, the minimal accepted level of sales should be met, and the R&D investment rate of more than 2% in the past 3 years or the growth rate of sales more than 15% in the past 5 years are required. Especially, in the growth strategy plan when applying for the program, the financial indices³⁾ in the past 5 years should be included, and based on the information the evaluation committee assess companies' financing capacity. Therefore, to meet such challenging criteria, companies which are located in doubtful positions to pass have incentives to manage upward earnings and this burden can be expected to have negative effects on the earnings quality for the screening year.

Meanwhile, other basic requirements list that applying companies are expected to reflect audit opinions in the recent years, and the major evaluation criteria include the CEO's motivations to ethical management, social responsibility, transparent management, and communication with the organizational members. To get good scores on the evaluated dimensions, the applicants self-evaluate the current management system and put efforts

into reinforce business effectiveness and improve transparent management. These general changes in the business innovation can have positive effects on earnings quality in evaluated year.

Therefore, both the negative effects of the burden of companies who adjust discretionary accruals in the screening year before selection($t-1$) to meet the financial conditions, and positive effects of the companies' efforts to transparent management on earnings quality are predicted. From this point of view, considering the relative effects of both positive and negative aspects, following hypothesis without any directional prediction is proposed.

Hypothesis 1: The earnings quality of the firms selected as the Global Champ project for the screening years is different from that of the others.

After passing the critical evaluation process, the companies selected in the Global Champ project are managed by the government following selection. The government has been continuously identifying the obstacles to growth and reviewing the progress of support plan. Based on these post management phase, depending on the evaluation results, some companies might be excluded from the World Class 300 appointed list.⁴⁾ The appointed companies would have motivation to stay on

3) The main financing indices are total loan-to-revenue multiple, total loan-to-owner's capital multiple, total loan-to-EBITDA multiple, operating profit rates, debt ratio, EBITDA interest coverage ratio, and asset turnover ratio and so on.

4) Selected companies should submit performance reports to KIAT every six months and they get mid-term evaluation

the appointed list by achieving the objectives for sales for 5 years, exports, and road maps for obtaining technology, investments, business innovation and recruitment.

The overall management system of a selected company is predicted to be reinforced by improving management issues in terms of CEO's motivations to ethical management, efforts for sustainable growth (social responsibility, transparent management, and customer management etc.), active communication with the organizational members, and incentive management system.

Therefore, for the selection year, which belongs to the post management phase of the program, there are both positive and negative effects on the earnings quality as the growth strategy plan also mentions the need to expand export, obtain technology and plan strategic investments. From this perspective, relative effects of selected year, the following hypothesis without any direction is proposed.

Hypothesis 2: The earnings quality of the firms selected as the Global Champ project for the selection year is different from that of the others.

III. Research Design and Sample Selection

1. Research Model

In this research, we examine whether earnings qualities for the screening year($t-1$) and the selection year(t) are different with that for the year before($t-2$) respectively. To do this, to the 65 companies that were selected from 2013 to 2014, we prepare companies that belong to the same market⁵⁾ and identified the most similar company to each selected company with similar total asset sizes as a paired group and compare the earnings quality between the two groups.

As in many previous researches, the earnings quality can be measured by using discretionary accrual from the overall earnings model. For discretionary accruals, we follow the cross-sectional models suggested by Dechow et al. (1995) and Kothari et al. (2005).⁶⁾ The focus of the hypothesis highlights the difference in the earnings quality between the evaluated year and selected year compared to that of the paired group. To test this idea with a regression format, the formula is as follows:

every 2 years. For the companies that score lower than 60 points should get second mid-term evaluation. If they get lower than 60 point in the second evaluation, their appointment in the program list is annulled.

5) The stock-listed companies, KOSDAQ listed companies of the selected companies were also comprised identically according to the categorization of external audit agencies.

6) In this study, to estimate the discretionary accruals, adjusted Jones model by Dechow et al.(1995) and Kothari et al.(2005)'s ROA control model were adopted. The discretionary accruals are measured by the residuals from cross-sectional estimation of the industry-year on each model with more than 10 observations.

$$AQ_{it} = \gamma_0 + \gamma_1 GS + \gamma_2 GSD_1 + \gamma_3 GSD_2 + \gamma_4 SIZE_{it} + \gamma_5 LEV_{it} + \gamma_6 CFO_{it} + \gamma_7 TA_{i,t-1} + \gamma_8 BIG4_{it} + \gamma_9 GRW_{it} + \gamma_{10} KOSPI + \sum IND + \sum YD + \epsilon \quad (1)$$

here,

AQ_1 =Discretionary accruals by Dechow et al.(1995)

AQ_2 =Discretionary accruals by Kothari et al.(2005)

GS =Dummy value if Global Champ firm is one, zero otherwise.

GSD_1 =Dummy value if Global Champ firm and the screening year is one, zero otherwise.

GSD_2 =Dummy value if Global Champ firm and the selection year is one, zero otherwise.

$SIZE_{i,t}$ =Ln(total asset)

$\leq V_{i,t}$ =Debt ratio.

$CFO_{i,t}$ =CFO at t year/total asset at t-1 year

$TA_{i,t-1}$ =Total accrual at t-1 year/total asset at t-1 year

$BIG4_{i,t}$ =Dummy value if Samil, Samjung, Hanyoung or Deloitte is one, zero otherwise.

$GRW_{i,t}$ =Sales growth ratio

$KOSPI$ = Dummy values if KOSPI firm is one, zero otherwise.

$\sum IND$ =Industry dummy value

$\sum YD$ =Year dummy

The dependent variable of the model is earnings quality, which is discretionary accruals. Considering the reliability or

transparency of the accounting information, as the discretionary accruals get larger, the quality is implied to be lower. The main explanatory variables are a dummy variable to indicate whether the selected company is or not(GS), a dummy variable to identify the selected company and the screening year(GSD₁) and a dummy variable to identify the selected company and the selection year(GSD₂). If the regression coefficient value of GS turns out to be positive, the earnings quality of the selected company would be evaluated as lower, while if the value turns out to be negative, it would mean that the earnings quality is relatively higher than the paired group. If the earnings quality improved due to the efforts invested by management innovation, the coefficient value would be observed as negative. In contrast, to raise the reported earnings, if a company managed upwards earnings, the coefficient value would be observed as positive. Likewise, if the earnings quality improved in the selected year, the coefficient value would be negative. In contrary, to improve reported earnings, if a company did upwards management, the coefficient value would be positive.

As an additional analysis, we include only the selected companies as the sample, and compare the earnings quality of the evaluated year and selected year each and identify the differences. For this, we omit the first dummy variable(GS) whether the observation is a selected company in the Global champs project from the model (1) and we develop model(2) as follows.

$$AQ_{i,t} = \gamma_0 + \gamma_1 D_1 + \gamma_2 D_2 + \gamma_3 SIZE_{i,t} + \gamma_4 LEV_{i,t} + \gamma_5 CFO_{i,t} + \gamma_6 TA_{i,t-1} + \gamma_7 BIG4_{i,t} + \gamma_8 GRW_{i,t} + \gamma_9 KOSPI + \sum IND + \sum YD + \epsilon \quad (2)$$

In here, the definition of variables is the same as in the formula (1).

The main explanatory variables of research model (2) are the dummy variable D_1 , whether it is for the screening year and the dummy variable D_2 , whether it is for the selection year. The baseline observation is the observation for the year before the screening($t-2$), and if the earnings quality improved, the coefficient value would be observed to be negative, but if the earnings quality got worse, the coefficient value would be positive. Moreover, according to the difference of earnings quality between the selected year and the year before evaluation, the coefficient of the dummy variable of D_2 , would be estimated differently.

The stated models also include various number of control variables that are expected to have effects on the quality of discretionary accruals based on previous research. The size of a company is measured by taking natural logarithms of total asset for year end, and according to the traditional political cost hypothesis, the coefficient value is predicted to be negative. As well, according to debt contract hypothesis, as the finance condition gets worse, the company is predicted to more likely to engage in upwards management, the coefficient of debt ratio(LEV) is expected to be positive. Operating cash flows (CFO) can be calculated by first including operating cash

flows of a specific year as part of total assets, and this implies preventing the opportunism of a CEO. Therefore, as the CFO is higher, the reliability of the accounting information is expected to be improved and the coefficient value will be negative (Park and Kwak, 2007).

The total accruals at a prior period(TA_{t-1}) is used to control time-series correlation of accruals, and this is because they have two implications including the occurrence and disappearance (Na and Choi 2003). The total accruals at a prior period are expected to have positive coefficient. Moreover, in previous research, as the size of accounting firms gets bigger, the audit quality is fine and the accrual quality of the companies under audit is seen to improve (Becker et al., 1998; Baek and Yu, 2005). Therefore, when an external auditor of the BIG 4 accounting firms such as Samil, Samjung, Hanyoung and Deloitte, the value was one, zero otherwise. Therefore, the value for the BIG4 dummy variable is expected to be negative. Moreover, the companies with high growth rate can get more investment opportunities and need more financing, indicating that the possibility for upwards management is higher. Based on this, the coefficient of growth rate (GRW) is predicted to be positive (Yoon and Lee, 2001). The dummy variable to identify whether a company was listed in securities market(KOSPI) was included, and earnings quality is predicted to be higher for the listed companies, meaning the coefficient is negative. Other industry dummy variables and year dummy variables were also added to make up a complete model.

2. Sample Selection

The sample in this study included 65 companies from the year 2013 and 2014 selected in the Global Champ project, and the paired companies were selected one on one considering the total asset sizes and the industry. The sample selection criteria in detail are given below.

- ① Companies that do not belong to a finance industry or holding company
- ② Companies whose settling day is on December 31st.
- ③ Companies in an industry that has more than 10 companies each year
- ④ Companies allows to use finance information from TS2000 database
- ⑤ Companies that did not have unqualified audit opinions during the research period

The composition of financial statement for finance companies is different from those of companies in non-finance industries and the operating characteristics are completely different. To maintain the consistency in analysis and secure the possibility to compare, companies in the finance industry will be excluded in this study. If the settling day of a company is not December 31st, evaluated year and selected year might be different. Thus,

companies with different settling days were excluded. In addition, to minimize the errors in estimating discretionary accruals, industries that have less than 10 companies with uncertain years were also excluded. Finally, companies that do not seem to have financial data available and companies that have received unqualified audit opinions were excluded.

The composition of the sample is given in the <Table 1>. In Panel A, the number of selected companies in the Global Champs by each year is provided. Of 65 companies selected from the year 2013 to 2014,⁷⁾ 25 companies under external audit, 12 stock listed(KOSPI) companies, and 28 KOSDAQ listed companies. The proportion of selected companies was 66.2% for the year 2013, with 43 companies taking up out of the total 65 companies.

In Panel B, we selected 55 companies out of 65 companies selected in the Global Champs program and that meet the criteria stated above⁸⁾ as the sample of interest, and for each sample, we selected companies that belongs to the same market(external auditing companies, stock listed and KOSDAQ listed companies) and the same industry with similar total asset size. Among the 55 companies, the external auditing companies were 19, KOSPI companies were 11, and KOSDAQ companies were 25. The paired sample consisted of 55 companies,

7) The government announced the Next Global Champs until 2014, but since 2015, the program was integrated into World Class 300 company list. Therefore, since the year 2015, the companies selected as the Global Champs could not be identified from the list anymore. (Source: www.worldclass300.or.kr)

8) The final samples extracted were 34 for 2013, and 21 for 2014, a total of 55 companies.

and 110 companies in total for the every year. sample was 550 company-year.
 As a result, the total observation for the

<Table 1> Sample Selection

Panel A : Number of companies selected as Global Champ per year					
Year	Number	Firms subjected from external auditors	KOSPI	KOSDAQ	Portion(%)
2013	43	18	8	17	66.2
2014	22	7	4	11	33.8
Total	65	25	12	28	100
Panel B: Number of sample					
Classification	Firms subjected from external auditors	KOSPI	KOSDAQ	Number	
Global Champ firms	19	11	25	55	
Control group firms	19	11	25	55	
Panel sample size	38	22	50	110	
Research period				5 years	
Total firm-year observation					550

The distribution of the selected company are 11 each, mechanical part manufacturers are sample by industry is given in <Table 2>. 7, and automobile and trailer manufacturers are Electronic parts and video product manufacturers 8.

<Table 2> Industry Distribution

Industry	Number	Industry	Number
Rubble and plastics	1	Other transportations	1
Chemicals	4	Basic metals	3
Medical supplies	7	Electronics	11
Publishing and printing	2	Textiles	1
Motor vehicles and trailers	8	Electrical equipment	3
Other machinery	9	Others	5
		Total	55

IV. Results from the Empirical Analysis

1. Descriptive Statistics and Correlation Coefficients

The descriptive statistics is given in the <Table 3>. To moderate the effects of extreme values, if a value exceeds the top 1% or falls below bottom 1%, all variables included in the main models were winsorised to have either 1% or 99%. In Panel A, the descriptive statistics for the whole sample is given and in Panel B, the average and median values of the major variable of selected samples and paired samples are given. In Panel A, the average and medians of the discretionary accrual variable AQ_1 created by the adjusted Jones model(1995) were each 0.0079 and 0.1930, and the average and medians of the discretionary accrual variable

AQ_2 created by the ROA model of Kothari et al.(2005) were each -0.0015 and 0.1450. In Panel B, the average of AQ_1 of the selected company sample was 0.0167, which was statistically higher than the average value of the paired sample, -0.0029, at 0.01 significance level. The average of AQ_2 of selected company sample, which was 0.0010, was statistically higher than the average value of the paired sample, -0.0045. These findings suggest that the discretionary accruals of the selected companies were higher than those of paired company samples.

Based on the statistical variables, the average and median value of operating cash flows(CFO) of the selected companies were each 0.0906 and 0.0734, whereas the average and median value of pair samples were each 0.0661 and 0.0564. They were statistically different. Other control variables for the selected companies showed similar tendencies as those of the paired samples.

<Table 3> Descriptive Statistics and Difference Test

	Mean	Std. dev.	25%	50%	75%
Panel A : Descriptive statistics of all sample (n=550)					
<i>AQ1</i>	0.0079	0.1930	-0.0448	0.0125	0.0629
<i>AQ2</i>	-0.0015	0.1450	-0.0594	0.0006	0.0557
<i>SIZE</i>	25.319	0.8831	24.715	25.385	25.955
<i>LEV</i>	1.0677	0.9824	0.3079	0.7361	1.5320
<i>CFO</i>	0.0783	0.1526	0.0131	0.0646	0.1224
<i>TAt-1</i>	-0.0331	0.1503	-0.0745	-0.0218	0.0260
<i>BIG4</i>	0.5166	0.5001	0	1	1
<i>GRW</i>	0.2025	1.5773	-0.0658	0.0625	0.1780
<i>KOSPI</i>	0.2	0.4003	0	0	0

Panel B Difference test between Global Champ sample and control group sample						
Variable	Global Champ sample (N=225)		Control sample (N=225)		Difference Test	
	Mean	Median	Mean	Median	t test	z test
<i>AQ1</i>	0.0167	0.0125	-0.0029	0.0126	2.71***	1.39
<i>AQ2</i>	0.0010	-0.0009	-0.0045	0.0043	2.92***	0.72
<i>SIZE</i>	25.411	25.517	25.224	25.237	1.07	0.83
<i>LEV</i>	1.0785	0.7323	1.0570	0.7490	0.26	-0.28
<i>CFO</i>	0.0906	0.0734	0.0661	0.0564	1.86*	2.32**
<i>TA_{t-1}</i>	-0.0313	-0.0203	-0.0348	-0.0223	0.27	0.88
<i>BIG4</i>	0.5090	1	0.5243	1	-0.35	-0.35
<i>GRW</i>	0.2171	0.0729	0.1881	0.0539	0.21	1.51
<i>KOSPI</i>	0.2	0	0.2	0	0	0

Note: 1) Definition of Variables: AQ_1 =Discretionary accruals measured by adjusted Jones(2005); AQ_2 =Discretionary accruals measured by Kothari et al.(2005); $SIZE$ =Natural logarithm of total asset in year t ; LEV =Debt ratio calculated by the total debt divided by the net asset in year t ; CFO =The operating cash flow in year t divided by the total asset in year $t-1$; TA_{t-1} =The total accruals in year $t-1$ divided by the total assets in year $t-2$; $BIG4$ =Dummy variables if the auditor is the big 4 accounting firms is 1, otherwise 0.; GRW =Rate of sales growth=(sales in year t -sales in year $t-1$)/sales in year $t-1$; $KOSPI$ = Dummy variables if firms belong to KOSPI, 1 otherwise 0.

2) t-test results for mean value and Wilcoxon z-test results for median value are reported.

3) ***, **, and * indicate significance at 1%, 5% and 10% levels, respectively(two-tailed).

In <Table 4>, the correlation coefficients of the main variables are given. The correlation coefficient of the discretionary accrual variable AQ_1 created by the adjusted Jones model(1995) and the correlation coefficient of the discretionary accrual variable AQ_2 created by the ROA model of Kothari et al. (2005) were 0.83, showing strong positive correlations. This indicates that the discretionary accruals model proposed in the research provides similar measurement properties. The dependent variables AQ_1 and AQ_2 were found to have

positive correlation with the dummy variable for selection GS.

Considering the correlation between the dependent variables and control variables, AQ_1 and AQ_2 had a significant negative correlation with operating cash flows(CFO), and a significant positive correlation with The total accruals at a prior period(TA_{t-1}), showing similar findings as in previous research. There were no significantly high correlations among other variables, so multi-collinearity in regression analysis is not expected.

<Table 4> Pearson's Correlation Coefficients

	<i>AQ₁</i>	<i>AQ₂</i>	<i>GS</i>	<i>GSD₁</i>	<i>GSD₂</i>	<i>SIZE</i>	<i>LEV</i>	<i>CFO</i>	<i>TA_{t-1}</i>	<i>BIG4</i>	<i>GRW</i>	<i>KOSPI</i>
<i>AQ₁</i>	0.83 (<.00)	0.05 (0.00)	0.06 (0.15)	-0.05 (0.20)	-0.05 (0.23)	0.03 (0.56)	-0.36 (<.00)	0.35 (<.00)	-0.03 (0.53)	0.07 (0.13)	-0.01 (0.89)	
<i>AQ₂</i>		0.02 (0.00)	-0.02 (0.65)	0.03 (0.42)	-0.03 (0.62)	-0.01 (0.91)	-0.41 (<.00)	0.18 (<.00)	0.02 (0.54)	0.02 (0.57)	0.02 (0.55)	
<i>GS</i>			0.25 (<.00)	0.26 (<.00)	0.10 (0.01)	0.01 (0.79)	0.08 (0.06)	0.01 (0.78)	-0.01 (0.72)	0.00 (0.83)	0.00 (0.99)	
<i>GSD₁</i>				-0.06 (0.12)	0.00 (0.84)	-0.02 (0.59)	0.07 (0.09)	-0.00 (0.91)	-0.02 (0.58)	-0.00 (0.89)	0.00 (0.92)	
<i>GSD₂</i>					0.03 (0.46)	-0.02 (0.54)	-0.01 (0.82)	0.05 (0.19)	-0.03 (0.36)	-0.02 (0.60)	0.00 (0.92)	
<i>SIZE</i>						-0.00 (0.91)	0.01 (0.72)	0.00 (0.85)	0.15 (0.00)	-0.04 (0.35)	0.50 (<.00)	
<i>LEV</i>							-0.15 (0.00)	-0.05 (0.20)	-0.06 (0.14)	0.00 (0.93)	0.10 (0.01)	
<i>CFO</i>								-0.35 (<.00)	0.03 (0.43)	0.14 (0.00)	-0.09 (0.03)	
<i>TA_{t-1}</i>									-0.02 (0.59)	-0.13 (0.00)	0.06 (0.15)	
<i>BIG4</i>										0.06 (0.13)	0.0 (0.37)	
<i>GRW</i>											-0.04 (0.31)	

Note: 1) The values in parenthesis represents the p-value(two-tailed)..

2) Variable definitions: see <Table 3>

2. Results of Regression Analysis

Next, company size, debt ratio, operating cash flow, total accruals at a prior period, auditing by large sized accounting firms, growth rate and stock market listing are known to have systematic effects on discretionary accruals, there by constructing a multiple regression model to control aforementioned variables to verify the differences in earnings quality between the

evaluated and selected year. In <Table 5>, the findings from the multiple regression analysis are provided. The findings for adding the discretionary accruals(*AQ₁*) from the adjusted Jones (1995) model as a dependent variable are given in Model 1, 2 and Model 3, and the findings for adding the discretionary accruals (*AQ₂*) from Kothari et al(2005) model as a dependent variable are given in Model 4, 5 and Model 6. In Model 1 and Model 4, the dummy variable for the selected firms(*GS*) and the

dummy variable for the screening year(GSD₁) were each added. In Model 2 and Model 5, the dummy variable of GS and the dummy variable for the selection year(GSD₂) were each added and analyzed. In Model 3 and Model 6, the dummy variables of GS, GSD₁ and GSD₂ were all added and analyzed.

The regression coefficient for the dummy variable of GS is observed to have positive value in all models at 99% confidence interval, showing higher discretionary accruals than the

paired sample. As a result of adding AQ₁ as a dependent variable, in Model 1, the regression coefficient for GSD₁ was not found to have a significant coefficient. In Model 2, the regression coefficient for GSD₂ was -0.027, showing negative value at 95% confidence interval. Also, in model 3 where both GSD₁ and GSD₂ were added, the coefficient for GSD₂ was -0.030, showing significant negative value at 95% confidence interval.

<Table 5> Results of Main Regressions

$$AQ_{jt} = \gamma_0 + \gamma_1 GS + \gamma_2 GSD_1 + \gamma_3 GSD_2 + \gamma_4 SIZE_{jt} + \gamma_5 LEV_{jt} + \gamma_6 CFO_{jt} + \gamma_7 TA_{t-1} + \gamma_8 BIG4_{jt} + \gamma_9 GRW_{jt} + \gamma_{10} KOSPI + \sum IND + \epsilon YD + \epsilon$$

Variables	Pred. Sign	AQ ₁ (Adjusted Jones(1995))						AQ ₂ (Kothari et al.(2005))					
		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
		Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
<i>Intercept</i>		0.136	0.76	0.142	0.79	0.133	0.75	0.111	0.55	0.105	0.52	0.110	0.54
<i>GS</i>	(+/-)	0.019	1.75*	0.015	1.82*	0.012	1.71*	0.014	1.14	0.010	1.69*	0.012	1.80*
<i>GSD1</i>	(+/-)	0.015	0.72			0.020	0.93	-0.015	-0.60			-0.013	-0.52
<i>GSD2</i>	(+/-)			-0.027	-2.23**	-0.030	-2.31**			-0.013	-2.37**	-0.011	-2.43**
<i>SIZE</i>	(-)	-0.003	-0.45	-0.003	-0.48	-0.003	-0.44	-0.003	-0.39	-0.002	-0.36	-0.003	-0.39
<i>LEV</i>	(+/-)	-0.014	-2.59***	-0.014	-2.58***	-0.014	-2.57***	-0.007	-1.18	-0.007	-1.17	-0.007	-1.17
<i>CFO</i>	(-)	-0.271	-10.78***	-0.271	-10.79***	-0.271	-10.78***	-0.255	-9.15***	-0.25	-9.14***	-0.255	-9.13***
<i>TA_{t-1}</i>	(+)	0.046	1.10	0.043	1.02	0.044	1.04	0.101	2.09**	0.101	2.08**	0.100	2.07**
<i>BIG4</i>	(-)	0.005	0.55	0.006	0.60	0.006	0.61	0.007	0.59	0.007	0.61	0.007	0.61
<i>GRW</i>	(+)	0.009	2.93***	0.009	2.94***	0.009	2.96***	0.008	2.31**	0.008	2.33**	0.008	2.31**
<i>KOSPI</i>	(-)	-0.017	-1.13	-0.016	-1.10	-0.017	-1.14	0.001	0.07	0.000	0.05	0.001	0.07
<i>IND</i>		Included		Included		Included		Included		Included		Included	
<i>YD</i>		Included		Included		Included		Included		Included		Included	
<i>Observations</i>		550		550		550		550		550		550	
<i>F-statistics</i>		15.31***		15.49***		14.02***		11.81***		11.80***		10.63***	
<i>Adj-R2</i>		0.221		0.2231		0.2229		0.1765		0.1764		0.1750	

Note: 1) ***, **, * indicate significance at 1%, 5%, 10% levels respectively.
 2) Variable definitions: see (Table 3).

Meanwhile, as a result of adding AQ_2 from the model by Kothari et al.(2005), in Model 4, the coefficient for GSD_1 was not statistically significant. In Model 5, the coefficient for GSD_2 was -0.013 at 95% confidence interval, showing negative value. Moreover, in Model 6 where both GSD_1 and GSD_2 were added, the coefficient for GSD_1 was not significant and the coefficient for GSD_2 was -0.011 at 95% confidence interval, showing negative value. These findings demonstrate that the earnings quality of selected companies are lower than the paired group, but after being selected as appointees in the Global Champs program, the earnings quality improved as a result of the self motivated efforts in transparent business operations and management innovation.

The coefficients for other control variables were also analyzed. The size of a company did not have a significant coefficient, but in the Model 1 where AQ_1 was added as a dependent variable, the debt ratio(LEV) had a significant negative value. In all models, the operating cash flows(CFO) had significant negative value, growth rate(GRW) had significant positive values, showing consistency with the previous research. However, the dummy variable for the large sized accounting firm auditing (BIG4) did not show a significant coefficient., showing inconsistency with the foreign previous research findings (Hwang et al, 2009).

3. Additional Analysis

In this chapter, we would like to analyze the difference in the earnings quality at different time points, by including only the selected companies for the sample. In the main analysis, the sample of the study included selected companies from 2013 to 2014 to make a comparative study with paired companies and the data from the year 2011 to 2015 were analyzed. When we compose a sample like this, companies selected in the year 2013 have 1 year observation before the screening year and 2 year observations after selected year, while the companies selected in the year 2014 have 2 year observations for before the screening year and 1 observation for after the selected year.

To overcome this problem and use consistent period, based on the selected year, the observations were restricted to one year before the screen, one screening year, and one selection year, which is described in detail in <Table 6>. To include observations for the year before the screen, screening year and selection year, the sample was reorganized. For instance, 34 selected companies in the Global Champs Program in 2013, the total number of observations for the 3 years were 102, and the observations of selected companies in 2014 for the three years were 63. In conclusion, the company-year observations used in the additionally analysis was 165 in total.

<Table 6> Number of Sample - Additional Analysis

Year	Year selected as 'Global Champ'		Total
	2013	2014	
2011	34		34
2012	34	21	55
2013	34	21	55
2014		21	21
Total	102	63	165

<Table 7> Results of Additional Regressions

$$AQ_{i,t} = \gamma_0 + \gamma_1 D_1 + \gamma_2 D_2 + \gamma_3 SIZE_{i,t} + \gamma_4 LEV_{i,t} + \gamma_5 CFO_{i,t} + \gamma_6 TA_{i,t-1} + \gamma_7 BIG4_{i,t} + \gamma_8 GRW_{i,t} + \gamma_9 KOSPI + \gamma_{10} \Sigma IND + \gamma_{11} YD + \epsilon$$

Variable	Predicted Sign	AQ ₁ (Adjusted Jones(1995))		AQ ₂ (Kothari et al.(2005))	
		Model 1		Model 2	
		Coefficient	t-value	Coefficient	t-value
<i>Intercept</i>		0.1688	0.39	0.4923	0.95
<i>D₁</i>	(+/-)	0.0095	0.38	0.0154	0.50
<i>D₂</i>	(+/-)	-0.0035	-2.30**	-0.0093	-1.99**
<i>SIZE</i>	(-)	-0.0031	-0.19	-0.0187	-0.91
<i>LEV</i>	(+/-)	-0.0113	0.97	0.0039	0.28
<i>CFO</i>	(-)	-0.2415	-7.92***	-0.2528	-5.45***
<i>TA_{t-1}</i>	(+)	0.0472	0.64	0.1857	2.08**
<i>BIG4</i>	(-)	-0.0038	-0.19	0.0050	0.20
<i>GRW</i>	(+)	0.0435	4.57***	0.0290	2.51**
<i>KOSPI</i>	(-)	-0.0370	-1.24	0.0153	0.42
<i>IND</i>		Included		Included	
<i>YD</i>		Included		Included	
<i>Observations</i>		165		165	
<i>F-statistics</i>		8.37***		5.20***	
<i>Adj-R²</i>		0.3124		0.2055	

Note: 1) ***, **, * indicate significance at 1%, 5%, 10% levels respectively.

2) Variable definitions: see (Table 3).

The findings from the additional analysis are given in <Table 7>. In Model 1, discretionary accruals(AQ₁) from adjusted Jones Model(1995) was added as a dependent variable, and in Model 2, discretionary

accruals(AQ₂) from Kohtari et al's model(2005) was added as a dependent variable. In each model, the dummy variable for the screening year D₁ and dummy variable for the selection year D₂ was added as a variable interest to

validate the analysis.

In Model 1, the dummy variable for the screening year (D_1) did not have a significant coefficient, but the coefficient for the selection year D_2 was -0.0035 at 95% confidence interval, showing negative value. As well, in Model 2 with AQ_2 , the dummy variable for the screening year (D_1) did not have a significant coefficient. For the dummy variable for selected year, the coefficient was -0.0093 at 95% confidence interval, showing a negative value. These findings show that earnings quality of the selected companies do not show any differences in the screening year compared to the year before. However, the earnings quality seems to improve significantly in the selection year, showing consistent findings with results of the main analysis.

Other control variables were also analyzed. The operating cash flow (CFO) had a significant negative value, growth rate (GRW) had a significant positive value, and stock listing variable (KOSPI) had a significant negative value, showing consistent findings as in the main study.

V. Conclusion

This study aimed to examine earnings quality of firms selected as Global Champs project which had been promoted by the government since 2013 to support small and medium sized enterprises, for the screening year ($t-1$) and selected year (t). Discretionary

accruals were chosen as a proxy to reflect earnings quality, and the earnings quality of firms selected as the project was analyzed.

Specifically, in the process of screening and growing as a global champ in the program, the positive effects on the earning quality where companies have to pass the evaluation, which covers technology development, expansion of overseas sales, investments, business, and negative effects by the burden of the companies to meet the application requirements (overseas sales amounts should have been between 20 million dollars to 100 million dollars at least once in recent 3 years) were analyzed.

The earnings quality was measured by the discretionary accrual model of the adjusted Jones model (1995) and ROA control model of Kothari et al. (2005). A noticeable point in this research is that the earnings qualities of selected companies and paired sample companies are compared and even additional analysis was conducted as only sample of the selected companies to compare a year before the screening year ($t-2$), the screening year ($t-1$) and selected year (t).

The research period was planned for 5 years from 2011 to 2015, and the 55 companies were chosen from 65 of total selected companies between 2013 and 2014. The paired companies were prepared to match the selected companies one on one, reflecting on same markets, industries and similar asset sizes. The total sample was 110 per each year. Thus, for 5 years, using 550 company-year observations were used to make up the whole

sample, the hypotheses were verified and additional analyses were conducted.

As the results of this study, major findings are summarized as follows. Firstly the earnings quality of selected companies was lower than that of the paired sample. This can be explained as a result of motivation of earnings management by companies eager to pass the evaluation to be selected for the Project. Secondly, in the selected year, the earnings quality was proved to improve compared to the previous years. This can be explained by the efforts of companies to reinforce management innovation and transparent management, which in turn led to positive effects on the earnings quality. These findings were found to be consistent in the additional analyses where the earning quality of the sample to reconstruct as only selected companies was compared for the screening year and the selected year, based on the year before the screening year.

This research intended to identify the changes of earnings quality and accounting transparency which are considered as internal aspects. The findings are meaningful to provide empirical evidences for the idea that the earnings quality of the selected firms have improved in terms of the internal accomplishments. However, the findings also suggest that the earnings quality gets lower in the process of meeting the requirements to be selected in the program, where the incentives to earnings managements likely to take place. From the finding, policy makers should pay attention to the fact alternative policy to

prevent earnings management in the process of evaluation should be devised.

This research still has limitations in that earnings quality is measured with discretionary accruals as in other previous research. Although discretionary accruals have been widely used in the context of information transparency and earnings management in empirical accounting research, it plays a limited role in measuring efficacies of certain accounting methods. Discretionary accruals can be affected by the differences of cross sectional company characteristics and changes of firm environment through elapsed years. Additionally, when environmental factors that cause general changes in a market, the effect of the change cannot be completely removed.

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Abstract

글로벌 전문사업 선정기업의 이익의 질[†]

공경태*

본 연구는 정부가 2013년부터 중견기업 중점 지원사업으로 추진하고 있는 글로벌전문사업에 선정된 기업에 대하여 심사연도와 선정연도 시점에 이익의 질의 차이를 관찰하고자 하였다. 이익의 질을 구성하는 속성 중 재량적 발생액을 이익의 질 측정 대응치로 선정하고 글로벌전문 기업으로 선정된 기업의 회계이익을 이익의 질 차원에서 분석하는 것이다. 구체적으로 글로벌전문사업에 선정된 기업이 글로벌 기업으로 성장하기 위하여 기술확보, 수출확대, 투자, 경영혁신·고용 등 평가 분야에서 심사를 통과하기 위한 자기 노력이 이익의 질에 미치는 긍정적 효과와 사업 신청 요건(최근 3년간 연 직수술증가를 2천만원에서 1억불사이에 1회 이상 경험)을 충족하고자 하는 유인, 사업 선정 후 성장전략서에 제시된 미래 목표 성과를 충족하기 위한 기업의 부담이 선정기업의 이익의 질에 미치는 부정적 효과가 선정기업의 이익의 질에 미치는 영향을 분석하였다.

발생액의 질은 대체적인 발생액 예측모형을 이용하여 추정된 재량적 발생액중에서 Dechow et al.(1995)의 수정 Jones 모형과 Kothari et al.(2005)의 ROA통제모형으로 측정된다. 본 연구가 지니는 특징은 표본기업으로 선정기업의 이익의 질과 대응기업의 이익의 질을 비교하고 있을 뿐 아니라 선정기업만을 표본으로 하여 심사직전연도와 심사시점(t-1기)과 선정시점(t기)의 각각의 이익의 질의 차이를 비교 분석하고 있다는 점이다. 연구기간은 2011년부터 2015년까지 5년간으로 설정하고 표본은 2013년부터 2014년까지 글로벌 전문기업에 선정된 65개 기업 중 표본선정기준에 부합되는 55개의 관심표본과 대응표본으로서 동일한 시장과 산업에 속하는 기업 중 총자산규모가 가장 유사한 기업을 1:1로 구성하여 연도별 표본수는 110이다. 따라서 연구기간 5년 동안 550 기업-년도의 관찰치로 구성된 총표본을 이용하여 연구가설을 검증하고 추가분석을 실시하였다.

주요 분석결과를 요약하면 다음과 같다. 첫째, 글로벌전문사업에 선정된 기업은 대응기업의 이익의 질 보다 낮은 것으로 나타났다. 이는 선정기업이 심사절차를 통과하고자 평가지표를 달성에 대한 이익 조정유인이 이익의 질에 부정적 영향으로 미친 것으로 보인다. 둘째, 선정시점에는 선정기업의 이익의 질이 선정이전에 비하여 개선된 것으로 나타났다. 이는 선정 후 경영자의 경영혁신 노력과 투명경영정착을 위한 노력이 이익의 질 향상에 긍정적 효과를 영향을 미친 것으로 보인다. 이러한 결과는 추가분석에서 선정기업만으로 표본을 재구성하여 심사직전연도를 기저로하여 심사연도, 선정연도를 각각 비교한 분석에서도 동일하게 나타났다.

핵심주제어: 글로벌전문사업, 재량적 발생액, 이익의 질

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