Impact of the Financial Support Program for High School Students in Japan

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This study examines the Japanese government's financial support program that began providing educational cost relief to high school students in 2010. The program has since been providing partial support for private high school tuition, depending on household income. Our results indicate that this financial support program overall has an insignificant impact on education-related expenditures, while we have some marginal evidence of educational cost reduction depending on the specifications.

JEL classifications: D04, D12, A21
Keywords: Educational financial aid, High School Tuition Support Fund Program in Japan, Education related expenditure, Private high school choice

1. Introduction

Governments of many developed countries have made education one of their top national priorities. This priority has been reflected in the increased national budget allocation for education. Previous studies found that government investment in education has a direct effect on human capital accumulation and, consequently, on long run economic growth (Kuhl and Andrade 2008).[1] Higher educated employees enjoy continued increase in average wages over employees with lower levels of education (OECD 2007). In addition, investment in human capital, especially in children's education, is considered to be among the most effective ways for countries to improve their national welfare and reduce poverty in the long term. Meanwhile, government benefit programs, including student aid, are designed to aid targeted populations (Angrist et al. 2009). Over the past decades, government subsidies for public sectors have been reduced and policies targeted towards particular sections of the population have been implemented.

In 2010, the Japanese government introduced a financial support program, the High School Tuition Support Fund Program (SFP), designed to subsidize tuition fees for private high schools. Japan Finance Corporation (2018) reported that individual educational costs are so high that other expenditures must be cut in order to afford education fees. Low-income households, with annual incomes of less than JPY 3.5 million, save relatively more on food and clothing expenditures than other annual income

[1] It is reported that one major challenge for education policymakers worldwide is connecting the higher education school system to the labor market (UNESCO Institute for Statistics 2011).

groups. SFP is expected to reduce the burden of educational expenditures, especially for low-income households, and provide students with opportunities for higher education.

Previous studies stated that educational financial support programs played a key role in meeting the higher educational demand (e.g., Angrist *et al.* 2009; Nielsen *et al.* 2010). Studies also examined educational expenditure patterns and found that the households' educational expenditures depended on their household income (e.g., Qian and Smyth 2011; Tansel and Bircan 2006). In addition, the cost of education is an important factor in student behavior. High tuition fees in high school could affect students' school choice between private and public schools (Stevans and Sessions 2000; Dronkers and Avram 2010), as well as academic performance in junior high school by reducing students' expectations of pursuing higher education (Psacharopoulos and Patrinos 2004; Sala-i-Martin *et al.* 2004).

We examine the effectiveness of SFP introduced in 2010, considering income differences and the consumption tax increase in 2014. The main contribution of this study is determining the causal effect of SFP on actual high school tuition expense reduction and change of education-related expenditures, which has not been addressed in the literature.[2] Using the National Survey of Family Income and Expenditure in 2009 and 2014 and adapting the difference-in-difference-in-difference (DDD) approach, our results indicate that SFP has an overall insignificant impact on education-related expenditures, while we have some marginal evidence of educational expenditure reduction depending on our specifications.

The remainder of the paper is organized as follows: The next section provides a literature review, Section 3 describes the institutional background, Section 4 presents the data sources and our empirical method, and Sections 5 and 6 present the results and discussions. Finally, Section 7 concludes the paper.

2. Literature Review

From a financial perspective, educational financial support programs play a key role in meeting higher educational demand through tuition cost reduction (Häkkinen and Uusitalo 2003; Garibaldi *et al.* 2012;), scholarships (Angrist *et al.* 2009), and financial aid (Nielsen *et al.* 2010). Häkkinen and Uusitalo (2003) evaluated the effect of the reform that shortened academic terms at Finnish universities in order to reduce the cost of financial support programs for students in 1992, and found a moderate effect of reduced student employment opportunities and an increased unemployment rate. Angrist *et al.*

2 Previous empirical studies showed that the elasticity of educational subsidies in college enrollment is large (Des Jardins *et al.* 2002; Ehrenberg and Sherman 1984; Hansen 1983; McPherson and Schapiro 1991).

(2009) found that academic support and financial incentives improve academic performance among college freshmen. Nielsen *et al.* (2010) estimated the response of college enrollment to a Danish reform using the register-based cohort data of high school graduates from 1985 to 1990, and found that financial support for students has a limited effect on college enrollment.

Research on educational financial support programs show that such programs not only promote higher enrollment and attendance rates but also change household expenditures. Kanellopoulos and Psacharopoulos (1997) investigated the private educational expenditures in Greece using data from the 1988 Family Expenditure Survey and found a remarkable inequality in educational expenditure patterns as well as access to higher education despite free educational programs for all household income levels. Using national household survey data and a propensity score matching method, Gao *et al.* (2010) examined the effect of urban China's primary public assistance program, the Minimum Living Standard Assistance (MLSA), on household expenditures. This study found that households receiving MLSA prioritized education and health over food, clothing, and rent expenditures.

Previous studies examined school choice and household education-related expenditure patterns. Stevans and Sessions (2000) examined differences in school choice between urban private and public school by race, using a sample of 4,172 students from the 1992 U.S. National Education Longitudinal Survey. This study found that, while students perform marginally better in private schools than in public schools, school choice is mostly taken advantage of by white urban residents. Using the Programme for International Student Assessment (PISA) data, Dronkers and Avram (2010) found that upwardly mobile parents preferred private schools, while lower and middle-class parents chose schools based upon segregation.

Regarding household education-related expenditures, Tansel and Bircan (2006) analyzed surveys in Turkey and found that urban households with higher income and parent education levels showed constantly increasing expenditures on private education and tutoring. Qian and Smyth (2011) argued that households' educational expenditures depend on educational background, occupation, and, more importantly, household income. Yang and Qiu (2016) examined the income effect on education using the overlapping generations model and found that lower-income households spend less on early education, thus curtailing the opportunity for children to pursue higher education. They suggested subsidizing early education as the most effective public policy to mitigate income inequality.

In recent years, more studies have used quasi-experimental methods to

demonstrate the increase in financial support programs designed to affect the households' educational burden. Van der Klaauw (2002) showed that a financial support program by an East Coast college in the U.S. affected student enrollment. Lindo *et al.* (2010) examined student responses to being placed on academic probation and found that probation at the end of the first year discourages some students from returning to school but improves others' GPAs Melguizo *et al.* (2016) analyzed the impact of the subsidized loan program of Access with Quality to Higher Education (ACCES) for low-income students using nationwide data from the Columbian Education Ministry. They found that the program is effective in terms of increasing the number of enrolling low-income students to higher education and decreasing dropouts, while also improving academic performance. The above studies found the impact of financial support programs at higher educational stages. However, few studies have addressed the high school stage and household educational burden.

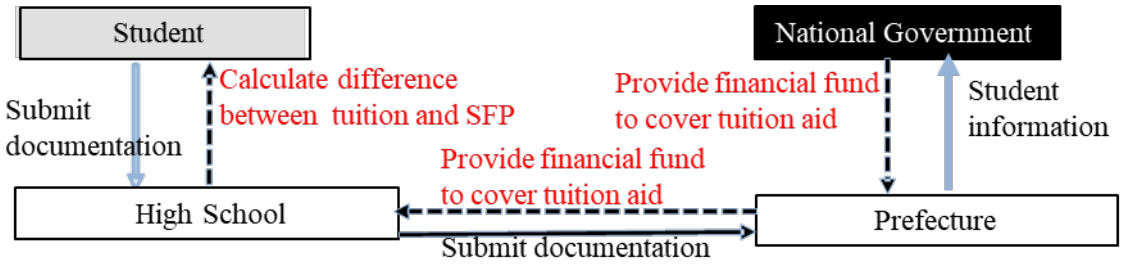
3. Institutional Background

SFP is a financial support program where the central government pays a portion of the tuition in order to reduce the household's educational burden of students entering private high school. Panel A of Figure 1 shows the application procedure of SFP. Japanese high school is a 3-year program consisting of first, second, and third-year students, equivalent to sophomore, junior, and senior students in the U.S. high school grade system. First, a student who has entered a private high school applies for SFP. Next, the high school submits the application to the local government, which forwards the application to the central government. After receiving SFP application, the central government provides financial support funds to the local government. Local government provides the funds to the private high school. Finally, the school calculates the difference between the tuitions and SFP funds, and requests the student's household to pay the remainder.

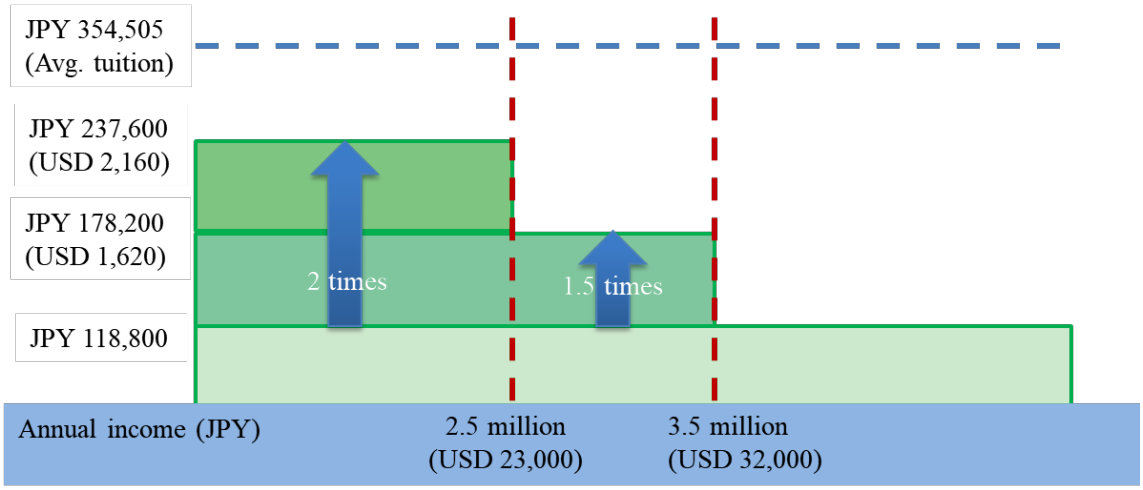
The problem with SFP is the timing of the fund payouts. Students apply for SFP after they enter private high school and funds are paid after the application. A household must therefore bear the burden of tuition temporarily. The actual procedure, timing, and method of payment depend on the private high school. Some schools request that students pay the reduced tuition to the school account; other schools request the total tuition payment first and reimburse to students later.

Figure 1

Panel A：Private School Financial Support Application Procedure



Panel B：Private School Financial Support Annual Amount (Year 2010)



Source: Ministry of Education, Culture, Sports, Science and Technology (2013)

Panel B of Figure 1 shows how the fund amount provided to the student through SFP depends on household income. The average tuition for private high school was JPY 354,505 (USD 3,222) in 2010.[3] The baseline annual SFP fund amount is JPY 118,800 (USD 1,080) for all households. In addition, households with annual incomes of less than or equal to JPY 2.5 million (USD 23,000) can receive additional funds, bringing their total aid to JPY 237,600 (USD 2,160) each, while households with incomes exceeding JPY 2.5 million and less than or equal to JPY 3.5 million can receive a total aid of JPY 178,200 (USD 1,620).[4] In 2016, the Japan Student Services Organization reported a rise

3 Besides the High School Tuition Support Fund, each local government provides other financial support such as the (1) High School Supplemental Scholarship, (2) support for households facing sudden changes in income, and (3) support for relearning.

4 To obtain tuition support funds, an application must be submitted along with the required documentation through the school, confirming the household's municipal income tax indexes. The income tax indexes include the municipal

in the number of applicants for SFP.[5]

Other than SFP, the 2010 Act on Free Tuition Fee at Public High Schools (FTF) provides total tuition for public school students, so that households need not pay public high school tuition fees. Because the current high school enrollment rate remains high, at over 98% in Japan, we focus on the impact of SFP on private school tuition expenditure, and public and private school choice rather than on overall entrance rates to high school.

4. Empirical Identification Strategy

We examine whether SFP as education cost relief for private high school students in 2010 impacts household education-related expenditures and private high school choice. First, we evaluate the joint effect of SFP and FTF and whether these programs decrease public and private high school tuition, and change expenditure patterns for textbooks, supplementary education expenditures such as supplementary school tuition fees, and education-related cultural and recreational expenditures, including goods such as personal computers, stationary, and books, and services such as a package tour and lesson fees. If a household can reduce high school tuition, it can increase other education-related expenditures with the saved money. For reference, we also examine the impact on household total and food expenditure.

To estimate the joint effect of SFP and FTF, we use the following base DDD regression model:

$$\begin{aligned} Y = {} & \alpha + \beta_1 After + \beta_2 Inc + \beta_3 PRI + \beta_4 (After \times Inc) \\ & + \beta_5 (After \times PRI) + \beta_6 (PRI \times Inc) + \beta_7 (After \times PRI \times Inc) \\ & + \gamma Z + \varepsilon \end{aligned} \tag{1}$$

where Y is our outcome variable. Independent variables are as follows. $After$ is an indicator variable, which equals 1 if the year is 2014 (after the introduction of SFP and FTF). Inc is an indicator variable of household income. Household income class constitutes 3 categories: $Inc < 3.5M$, $3.5M \leq Inc < 5M$, and $5\ M \leq Inc$ (M represents JPY million) The base of regression is $3.5M \leq Inc < 5M$. Because households with incomes of less than 3.5M have higher financial support, as shown in Panel B of Figure 1, SFP should have a greater impact on the lowest income class ($Inc < 3.5M$).[6] PRI is a private school choice indicator, which is equal to 1 if a student chooses

income tax notification, residence tax notification, and a tax declaration certificate.

5 SFP has been changing since April 2014. We plan to examine these reforms in our future work.

6 All households going to private high schools obtain financial support from SFP. Furthermore, a household with an income of less than 3.5M obtains additional support, while those with incomes of less than 2.5M receive even higher

private school.[7] Z represents a set of control variables including prefecture, the number of households, and age of the household head.

The outcome variable takes seven forms: private school tuition expenditure (*Tuition*), textbook expenditure (*Textbook*), supplement school related expenditure (*Sup. education*), and education-related cultural and recreational expenditures (*Cultural-recreation*). For reference, we also examine the impact on food expenditure (*Food*), household total expenditure (*Total*).

The equation (1) estimates the joint effect of SFP and FTF, and cannot capture the effect of SFP alone, because SFP and FTF are simultaneously implemented in 2010. The relative effect of SFP to FTF is captured by the DDD estimator β_7.

Second, we estimate the causal effect of SFP considering the consumption tax increase. In Japan, the consumption tax increased from 5% to 8% during our sample period; this applied to most expenditures with some exceptions, such as school tuition and medical expenses. The consumption tax increase was decided in Parliament in August 2012, and was implemented in April 2014. The consumption tax increase may change household expenditure patterns and, in turn, private high school choices.

Figure 2 shows our empirical identification strategy. As explained below, we use data for 2009 (before SFP is introduced) and 2014 (after SFP is introduced). We compare the expenditure patterns of first and second-year high school students, whose decision is influenced by the consumption tax increase, with that of third-year students whose decision for the high school choice is not influenced by the consumption tax increase. We assume that students who choose a school before August 2012 (when the consumption tax increase is decided) are not influenced by the consumption tax increase because the students are unaware of the tax increase's exact timing. Students who decide after August 2012, may however be influenced by the tax increase. As shown in Figure 2, students who enter high school in April 2012 are assumed not to be influenced by the tax increase, and are only affected by SFP when they choose a school, while those who enter in 2013 and 2014 may be affected by both SFP and the tax increase. In our 2014 data, students who enter high school in 2012 become third-year students, and those who enter in 2013 and 2014 become second and first-year students, respectively. We consider a high school student aged 18 as a third-year student. Similarly, a high school student aged 17 or 16 is considered a second and first-year student, respectively.

These variations are used to identify the causal effect of SFP according to year

levels of support. However, we omit this difference and merge these low-income groups as households with incomes of less than 3.5M because the number of low-income samples is limited.

[7] Previous empirical studies used the school attendance indicator variable for school choice (Stevans and Sessions 2000; Dronkers and Avram 2010).

of SFP introduction, consumption tax increase decision, and household income differences.

Figure 2: Empirical Identification Strategy

Year	Event	High school entry year							
		2007	2008	2009	2010	2011	2012	2013	2014
2009 Oct.	Year2009 Consumption Survey	Third	Second	First					
2010 Apr.	SPF and FTF are introduced		Third	Second	First				
2011 Apr.				Third	Second	First			
2012 Apr.					Third	Second	First		
2012 Aug.	Consumption tax increase is decided								
2013 Apr.	Consumption tax increase is implemented					Third	Second	First	
2014 Apr.							Third	Second	First
2014 Oct.	Year2014 Consumption Survey						Third	Second	First

Note: The high school year in Japan starts in April. We use 2009 and 2014 consumption survey data. First, Second, and Third represent first, second, and third-year high school students, respectively. SFP and FTF represent the financial support fund program for private high school students and the free tuition fee program for public high school, respectively.

In order to identify the causal effect of SFP considering the consumption tax increase, we use the following DDD regression as our main model:

$$\begin{aligned} Y = {} & \alpha + \beta_1 After + \beta_2 Inc + \beta_3 FS + \beta_4 (After \times Inc) \\ & + \beta_5 (After \times FS) + \beta_6 (FS \times Inc) + \beta_7 (After \times FS \times Inc) \\ & \gamma Z + \varepsilon \end{aligned} \tag{2}$$

where FS is an indicator variable equal to 1 if a student in the first or second year. We limit samples to private high school students. The DID (difference in difference) estimator β_4 captures the effect of SFP. The DDD estimator β_7 captures the effect of consumption tax increases in addition to the effect of SFP. The base of regression is the income classification ($3.5M \leq Inc < 5M$).

The DDD estimator β_7 captures the direct effect of the consumption tax increase on private high school tuition, where school choice is made before the consumption tax increase; other variables do not measure the direct effect. All expenditures except private high school tuition, such as books, are determined when they are purchased, and may be affected by the tax increase. However, supposing that school choice decisions are given, these variables can capture the indirect effect of the

consumption tax increase by comparing two groups: the groups affected or unaffected by the tax increase.

For reference, we also estimate the private school choice (*PRI*) over public school, using a sample of all students attending private and public high schools by equation (2).[8] SFP may increase private high school's attractiveness due to the reduced tuition burden, even if there is no tuition for public school.

Table 1: Descriptive Statistics

Panel A: Private and Public High School Students

		Year = 2009				Year = 2014			
	Unit	Avg	Std	Min	Max	Avg	Std	Min	Max
Tuition	(m)	24,741	(23,284)	0	254,904	15,957	(24,480)	0	931,186
Textbook	(m)	769	(2,255)	0	61,046	542	(1,805)	0	50,627
Sup. education	(m)	6,979	(17,644)	0	250,513	7,905	(24,027)	0	311,208
Cultural-recreation	(m)	32,713	(32,218)	0	500,144	28,503	(25,202)	0	395,768
Food	(m)	86,643	(33,012)	12,101	339,727	85,835	(33,418)	16,299	309,734
Total	(m)	412,656	(225,146)	60,058	2,675,663	382,102	(200,414)	35,948	2,241,604
PRI	(d)	0.39	(0.49)	0	1	0.43	(0.5)	0	1
First-year school student	(d)	0.42	(0.49)	0	1	0.41	(0.5)	0	1
Second-year school student	(d)	0.39	(0.49)	0	1	0.42	(0.5)	0	1
Third-year school student	(d)	0.19	(0.39)	0	1	0.17	(0.4)	0	1
N		3,248				2,887			

Panel B: Subsample of Private High School Students

		Year = 2009				Year = 2014			
	Unit	Avg	Std	Min	Max	Avg	Std	Min	Max
Tuition	(m)	36,564	(31,635)	0	254,904	25,736	(29,436)	0	249,000
Textbook	(m)	1,024	(3,019)	0	61,046	709	(2,321)	0	50,627
Sup. education	(m)	7,205	(16,553)	0	196,405	10,106	(30,229)	0	311,208
Cultural-recreation	(m)	36,784	(37,583)	543	500,144	30,482	(25,210)	0	196,626
Food	(m)	90,784	(36,274)	13,612	339,727	90,876	(36,052)	16,299	309,734
Total	(m)	462,448	(241,246)	73,248	2,034,874	432,200	(215,300)	84,250	1,727,999
First-year school student	(d)	0.41	(0.49)	0	1	0.38	(0.49)	0	1
Second-year school student	(d)	0.38	(0.49)	0	1	0.44	(0.50)	0	1
Third-year school student	(d)	0.21	(0.41)	0	1	0.18	(0.39)	0	1
N		1,101				1,110			

Note: PRI is a dummy variable if the student is in a private high school. (m) and (d) represent monthly JPY and a dummy variable, respectively.

Our data are from the National Survey of Family Income and Expenditure conducted by the Ministry of Internal Affairs and Communications (2014). The survey, which has been conducted every five years since 1959, records families' income and expenditures and includes family structure and education-related expenses. We use the

[8] The model for PRI is still the joint effect of SFP and FTF.

2009 and 2014 surveys with households comprising two or more members. The total sample size is 52,716 for 2009 and 51,768 for 2014. Income and expenditure data are based on the average values for the three months from September to November. We limit the data to households with a head of household, spouse, and children, where only one child is going to high school, in order to estimate the precise impact of SFP. Table 1 shows the descriptive statistics for our data in 2009 (before SFP is introduced) and 2014 (after SFP is introduced). Panel A is from our total data, including private and public high school students for estimating equation (1). The total sample is 6,135 (3,248 in 2009 and 2,887 in 2014). Panel B is a subsample of private school students for estimating equation (2).

5. Results

Panel A of Table 2 shows the estimation results for equation (1). We show only results for our coefficients of interest: β_7. Column 1 shows the result of high school tuition expenditure. The β_7 coefficient of the group with $Inc < 3.5M$ is negative and statistically significant (P < 0.1). Columns 2 through 7 show the expenditures for textbooks, supplementary school-related items, education-related cultural and recreational activities, food, and household totals. The β_7 coefficients of income $Inc < 3.5M$ are insignificant. These results indicate that SFP, compared with FTF, has a marginal negative impact on the high school tuition expenditure of households with incomes of less than JPY 3.5 million, although the SFP has an insignificant impact on other expenditures.

Panel B of Table 2 shows the estimation results for equation (2). Columns 1, 2 and 4 of Panel B show the results for high school tuition, textbook and education-related cultural and recreational expenditures. Both β_4 and β_7 coefficients are insignificant. The results indicate that SFP and consumption tax increase have no significant impact on these expenditures. In Column 3 on supplementary school related expenditures, the β_4 coefficient of $Inc < 3.5M$ has a positive significance (P < 0.1) while the corresponding β_7 coefficient has a negative significance (P < 0.05), indicating that SFP may have a marginal positive impact on supplementary school-related expenditures, while the consumption tax increase has a negative significant impact on the expenditure of households with incomes of less than JPY 3.5 million.

Table 2: Estimation Results

Panel A: Base model

		(1) Tuition		(2) Textbook		(3) Sup. education		(4) Cultural recreation		(5) Food		(6) Total	
β_7	After×PRI×(Inc<3.5M)	-13,093.8	*	-341.2		-1,356.3		-497.0		-7,909.5		-91,117.2	
		(7,041.3)		(311.0)		(3,969.7)		(7,258.9)		(9,302.7)		(58,538.7)	
	After×PRI×(5.0M≦Inc)	787.1		-447.0	*	3,713.1		4,715.1		5,103.7		42,043.2	
		(4,724.1)		(270.7)		(2,648.8)		(4,192.3)		(5,175.6)		(32,952.4)	
	N	6,135		6,135		6,135		6,135		6,135		6,135	
	F-value	21.6	***	2.7	***	4.8	***	10.0	***	18.7	***	19.7	***

Panel B: Main model

		(1) Tuition		(2) Textbook		(3) Sup. education		(4) Cultural recreation		(5) Food		(6) Total		(7) PRI	
β_4	After×(Inc<3.5M)	-13,464.6		-83.4		13,216.2	*	-14,390.9		-1,397.0		-8,869.2		0.113	
		(18,299.0)		(409.3)		(7,595.4)		(21,128.5)		(19,772.3)		(120,917.7)		(0.151)	
	After×(5.0M≦Inc)	-7,684.7		-1,011.2		-352.5		-1,452.4		13,324.8		75,727.4		-0.057	
		(12,083.1)		(615.4)		(5,575.9)		(7,128.0)		(12,662.9)		(75,606.4)		(0.087)	
β_7	After×FS×(Inc<3.5M)	1,367.5		102.1		-17,548.1	**	14,518.7		403.7		-40,039.2		-0.250	
		(20,019.3)		(498.1)		(8,475.0)		(22,659.3)		(22,162.3)		(139,070.7)		(0.171)	
	After×FS×(5.0M≦Inc)	9,157.6		777.9		6,189.9		3,880.4		-5,641.9		-56,032.5		0.038	
		(13,181.8)		(675.1)		(6,331.6)		(8,493.1)		(13,678.2)		(83,059.9)		(0.099)	
	N	2,211		2,211		2,211		2,211		2,211		2,211		6,135	
	F-value	4.5	***	2.4	***	2.6	***	3.8	***	8.6	***	7.9	***	9.4	***

Note: *After* is a dummy variable for year = 2014, *PRI* is a dummy variable for private high school students, FS is a dummy variable representing that the student is a first and second-year high school student, and each *Inc* is a dummy variable representing a particular household income bracket as described in the main text. Dummy variables for prefecture, the number of households, and household head age are used as control variables. Sampling weights are applied. M represents million JPY. Numbers inside parentheses represent the robust standard errors. *** indicates statistical significance at P < 0.01, ** at P < 0.05, and * at P < 0.10.

Columns 5 and 6 show that SFP and the consumption tax increase have no significant impact on food and total expenditures, although prices of most goods and services are increased due to the tax increase. This indicates that households may change consumption patterns by consuming less expensive goods and services, which adjusts education-related expenditures other than the supplementary school expenditures.

From Column 7, SFP and consumption tax increase have no significant impact on the private school choice.

6. Discussion

We examine SFP's effect on private high school and find that, overall, SFP and the consumption tax increase have no significant impact on most of the education-related expenditures we consider, while SFP has a marginal positive impact on supplementary school-related expenditures such as a cram school. In addition, we find that SFP has a marginal negative impact on high school tuition expenditure of households with incomes below JPY 3.5 million when we consider the joint effect of SFP and FTF.

The reasons for the insignificant impact of SFP on household behavior could be that, first, SFP is not given by cash subsidies, but by reducing the student's tuition. The calculated real tuition of private high schools, considering SFP, is not disclosed, and households have no clear idea of the actual price of school tuition. Information given to households about SFP may not be satisfactory to increase private school choice. Without this information, households are unable to apply for SFP, may not recognize the potential reduction in the private tuition burden, and may not change their consumption patterns and private school choice. Second, the timing of SFP payments is concerning. SFP may be applied for after entering private high school, and fund payment occurs after the application. A household must temporarily pay full tuition, in many cases, in order to enter the school. Third, the private tuition has increased since the establishment of SFP, which may negate the benefits of SFP.[9] Therefore, SFP may not have enough of an impact to change household behavior. We will examine these issues in our future work.

Some limitations of this study are as follows. First, our sample size is limited. Although our data are from one of the largest expenditure surveys in Japan, they are not targeted toward households comprising high school students. Second, the data we use are the average income over three months and expenditure data from September to November, which may not indicate annual expenditures if specific expenditures do not happen regularly. Third, we also use the high school student's age as proxy for grade. We admit

9 Lucca *et al.* (2018) explained that the simultaneity problem of higher tuition costs raising the financial aid affects the equilibrium of tuition costs.

that our results should be understood under these limitations, which are the focus of our future research.

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