DESIGNING A CREDIT SYSTEM TO MATCH BETTER PERFORMING

STUDENTS WITH BEST FOUNDATION UNIVERSITIES

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

OF

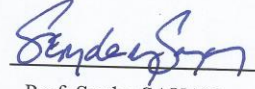TOBB UNIVERSITY OF ECONOMICS AND TECHNOLOGY

TUĞÇE TATOĞLU

THE DEPARTMENT OF ECONOMICS

THE DEGREE OF MASTER OF SCIENCE

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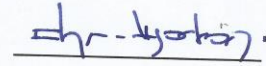I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science

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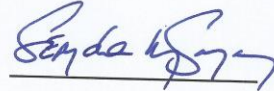
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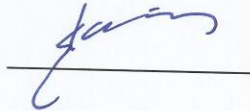
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Tuğçe TATOĞLU

ABSTRACT

DESIGNING A CREDIT SYSTEM TO MATCH BETTER PERFORMING

STUDENTS WITH BEST FOUNDATION UNIVERSITIES

TATOĞLU, Tuğçe

M.Sc., Economics

Supervisor: Prof. Salih Fatih ÖZATAY

A private credit system is designed in this thesis, since there is not a system providing a financial support for the students, who have sufficient scores from university entrance exams for paid education in the best foundation universities in Turkey. This financial support is created for borrowing from the banks while necessary collateral being provided by the Education Guarantee Fund and another support is presented by a repayment system, in which the students make payments in direct proportion to their incomes after graduation. At the same time, the government provides interest subsidy support for the repayments of the students, thus the repayment cost for the student is decreased.

This research study is composed of six sections; first section is the introduction, the second section is importance of higher education, the third section is the analyzing better performing students and best foundation universities, the fourth section is financing higher education with loans, the fifth section is policy suggestion for financing the higher education, and the sixth section is the conclusion. The finance need of the students, who had sufficient scores for the best foundation universities, was supported by a field research conducted on 253 students. In order to fulfill the finance need of the students, applicable credit systems were discussed and it was determined that the most effective credit system was Education Guarantee Fund.

Key Words: Better Performing Students, Best Foundation Universities, Educational Financing, Income-Contingent Credit System, Education Guarantee Fund

ÖZ

DAHA İYİ PERFORMANS SERGİLEYEN ÖĞRENCİLER İLE EN İYİ VAKIF ÜNİVERSİTELERİNİ EŞLEŞTİRMEK İÇİN ÖZEL BİR KREDİ SİSTEMİ TASARLANMASI

Tuğçe TATOĞLU

Yüksek Lisans Tezi, Ekonomi

Danışman: Prof. Dr. Salih Fatih ÖZATAY

Bu tezde, Türkiye'deki en iyi vakıf üniversitelerinde ücretli eğitim almak için üniversite sınavından yeterli puanı almış öğrencilere, eğitim ücretlerini borçlanarak finanse edebilme imkanı sunacak bir sistemin mevcut olmaması nedeniyle, bu imkanı sunan özel bir kredi sistemi tasarlanmıştır. Eğitim Garanti Fonu ile öğrencilere gerekli kefalet sağlanarak bankalardan borçlanma imkanı yaratılmış ve borçlarını mezun olduktan sonra elde edecekleri gelirleri ile doğru orantılı olarak ödeme imkanı sunulmuştur. Aynı zamanda öğrencilere borç geri ödemelerinde devlet tarafından faiz sübvansiyonu desteği sunularak öğrencilerin geri ödeme maliyetleri azaltılmıştır.

Bu çalışma; birinci bölümde giriş, ikinci bölümde yükseköğrenimin önemi, üçüncü bölümde daha iyi performans sergileyen öğrenciler ile en iyi vakıf üniversitelerinin analizi, dördüncü bölümde kredilerle yükseköğrenimin finansmanı, beşinci bölümde yükseköğrenimin finansmanı için politika önerisi ve sonuç olmak üzere altı bölümden oluşmaktadır. En iyi vakıf okullarına gitmek için yeterli puana sahip öğrencilerin finansman ihtiyaçları ise 253 öğrenciye uygulanan alan araştırması ile desteklenmiştir. Öğrencilerin finansman ihtiyacını ortadan kaldırmak için ise uygulanabilir kredi sistemleri tartışılmış ve en etkin kredi sisteminin Eğitim Garanti Fonu olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Daha İyi Performans Sergileyen Öğrenciler, En İyi Vakıf Üniversiteleri, Eğitim Finansmanı, Gelir Şartlı Kredi Sistemi, Eğitim Garanti Fonu

To mom Aynur, dad Adnan, brother Sabri TATOĞLU and
aunt Hatice BAL and grandfather Sabri TATOĞLU

None of my success would have been possible without their support and love

ACKNOWLEDGEMENTS

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ABRREVIATION LIST

ARWU	:	Academic Ranking of World Universities
ATO	:	Australian Taxation Office
CEDEFOP	:	European Centre for the Development of Vocational Training
COHE	:	Council of Higher Education
CPI	:	Consumer Price Index
CWUR	:	Centre for World University Rankings
ED	:	U.S. Department of Education
EGF	:	Education Guarantee Fund
FDLP	:	Federal Direct Loan Program
FSA	:	Federal Student Aid
GDP	:	Gross Domestic Product
G-20	:	Group of 20
HEA	:	The Higher Education Act of 1965
HECS	:	Higher Education Contribution Scheme
HELP	:	Higher Education Loan Program
IBP	:	International Business Publications
IBR	:	Income-based Repayment
ICL	:	Income Contingent Loan
ICLS	:	Income Contingent Loan Scheme
ICR	:	Income Contingent Repayment
IHEP	:	The Institute for Higher Education Policy
METU	:	Middle East Technical University
OECD	:	Organisation for Economic Co-operation and Development

PAYE	:	Pay as You Earn
PISA	:	Programme for International Student Assessment
PLUS	:	Parent Loan for Undergraduate Students
PPP	:	Purchasing Power Parity
REPAYE	:	Revised Pay as You Earn
RUR	:	Round University Ranking
R&D	:	Research and Development
THE	:	Times Higher Education
TURKSTAT	:	Turkish Statistical Institute
UK	:	United Kingdom
URAP	:	University Ranking by Academic Performance
US	:	United States
USA	:	United States of America
QS	:	Quacquarelli Symonds

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CHAPTER I

INTRODUCTION

There were 112 state, and 68 foundation universities in Turkey as of 2016-2017 education year, according to the data provided by CoHE(COHE, n.d.). The number of undergraduate students for the same period is reported as 4,071 million. Among these students are the ones, who had sufficient scores from the university exams for paid education or education with 50 % or 25 % scholarships in the best foundation universities that are on top of the most preferred universities list and/or on top of the Worldwide university ranking made by the best ten ranking institutions. Moreover, scores of these students outperform most of the scores of those already enrolled to programs of the best foundation universities with fully paid or semi-paid schemes. However, it was observed that most of these students could not afford the education fees of the best foundation universities, therefore, they had to be placed in the state universities lower on the list and/or not even ranked. The mirror image of this fact is that an important capacity of the best foundation universities are used by students whose performance remain well below these students. The lists of the university ranking institutions are based on certain criteria such as research, teaching, knowledge transfer and international outlook. According to this, it is assumed that the universities placed on top with higher scores in these criteria have better education compared to the ones down on the list. In this respect, these students are being placed in state universities down on the list instead of the foundation universities on top, limits the growth of skilled workforce in our country. Since there is not a credit mechanism for these students to finance paid education in the best

foundation universities in Turkey, a private credit system is designed in this research study to provide this support.

In the second section, the possible effects of the system, which is designed to match the better performing students with the best foundation universities, on the growth and development process of the country are handled. In this purpose, an extension of the Solow model was examined and it was concluded that human capital differences of the countries are an important reason for the differences in the income per capita. In the same model, it was also concluded that there is more human capital in the countries, where there are more educated workers, which would effect positively the income per capita. In the ampirical studies, it was observed that the human capital had a higher effect on the production difference between the rich and the poor countries, compared to the real capital. Moreover, not only the quantity of the human capital, but also the increase in quality has an increasing effect on the product. Within the scope of these findings, allocating more financial support to the successful students in higher education is expected to contribute to the development and growth process of our country.

In order to desing a credit system that brings together the students whose university entrance exam scores are higher than those of students attending to fully paid or semi-paid schemes of the best foundation universities (from now on, shortly, "better performing students"), it is vital to determine better performing students and the best foundation universities in Turkey.For the 2016-2017 education year, the students in the Economy, and Electric-Electronics Engineering Departments were included in this study. These departments were determined in order to analyse whether there are differences in the attitudes of the social science students and physical science students towards borrowing program.

As is examined in section three, better performing students in the selected departments were determined according to the data provided by the CoHE about the score rankings of the students placed at certain universities: Accordingly, better performing students in the selected departments are composed of the ones, who had more than sufficient scores for education in the best foundation universities with non-scholarship, 25%, or 50% scholarship. The three basic criteria for determining the best foundation unviersities are: the most preferred universities by the students published by the CoHE, the university ranking list conducted by the ten university ranking institutions in the world, and the results of the survey conducted on the university students. When all of the criteria were analyzed together, it was concluded that the best foundation universities in Turkey were Bilkent and Koç Universities. In the survey study, 253 students were asked to evaluate four foundation unversities and fourteen state universities. According to the results, the education quality of Koç and Bilkent Universities was evaluated as "very well" by 66,4% and 54,5% by the students, respectively. Additionally, it was asked to the students whether they would accept education in these universities if they had full scholarship chance, and 87% of the students answered as "Yes, I would". These students, who evaluated these universities as "very well" and, who would accept these universities if they had sufficient scores for full scholarship, evaluated the education quality of the universities that they were placed as "medium level" (they did not prefer paid education in Koç and Bilkent Universities). This proved that they did not have sufficient finance to afford the education fees in these foundation universities. When the students were asked whether they would accept the paid education via a credit system for financing the education fees, most of the students thought negative about borrowing program. The motive behind this preference can be explained by that one-

third of the students could not predict their incomes after graduation, while two-third of them mentioned that the main criterion for their university preference was the employment opportunity after graduation.

In order to design an ideal credit system for financing the education needs of the students, current credit systems in the world were examined in the fourth section. As the conclusion of examining, it was determined that higher education finance is generally provided by the public sector. It is observed that the income-contingent credit system, which was firstly implemented in Australia in 1989 for the students to to make the repayments easily, has also been implemented in countries such as the UK, New Zealand, Sweden, Scotland, and South Africa (Johnstone 2005, 9). Particularly in the USA, the mortgage type system turned into a real financial burden for the students, many of whom could not make the repayments. In this point, the public sector stepped in, creating new systems for the students with high debts but fewer incomes or no income to make income-contingent repayments.

In Turkey, it is observed that the finance provided by the public sector to the students for their higher education is not sufficient to afford the education fees of these universities. Therefore, it is considered that the banks can provide the necessary finance instead of the public sector. However, as is discussed in the fifth section in detail, the risks and uncertinties regarding the future incomes of the students cause the banks to be reluctant in opening credits for the students. Therefore, if the public sector steps in by providing guarantee for a part of or for complete loans of the students, the banks will participate in the system. In this purpose, it is expected that creating an opportunity to borrow from the banks by generating a fund for education (Education Guarantee Fund), will contribute to the growth and development of Turkey. On the other hand, in the suggested system, in

order for the students to make repayments simply, it was projected that the repayment be a percent of the income of the students after graduation. In this sense, in case the students cannot repay fixed installments determined by the banks due to low income, they will be able to make repayments to the bank by borrowing from the fund, and will repay the amount taken from the fund after their incomes increase. Therefore, the support of the fund for the students is not unpaid, it is expected that the interest rate subsidy will be unpaid which will be paid by the own sources of the fund. In the fifth section of the study, it was asserted that Education Guarantee Fund (EGF) is an efficient mechanism in order for the system to function sustainably for both the students and the banks.

CHAPTER II

IMPORTANCE OF HIGHER EDUCATION

Studies that emphasize the importance of education on growth of countries have recently become more important, since the countries that invest in human capital have faster growth processes. In this sense, education is one of the main determining factor on the growth of Eastern Asian countries such as Hong Kong, Singapore, South Korea, and Taiwan. Human capital covers not only educated labor but also all investments in the labor, which develop the skills such as parental education, schooling and learning-by-doing. In this section, the effect of education on the growth performance of countries is analyzed.

2.1. Extending the Solow Model to Include Human Capital[1]

2.1.a. The Model

Output is determined by human capital, physical capital and technology. The production function that shows the relation among these variables is Cobb-Douglas type:

$$Y_t = K_t^{\alpha}(A_t H_t)^{1-\alpha} \tag{1}$$

where Y is output, K is capital, and A is the effectiveness of labor (technology). H is the total amount of productive services supplied by workers. It includes the contribution of both raw labor and human capital:

$$H_t = L_t \, G(E) \tag{2}$$

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[1] This section is largely based on Romer (2012, 132-144)

where L is the number of workers. The amount of resources allocated to human capital accumulation determines the amount of human capital. $G(.)$ is a function that represents human capital per worker (H/L) as a function of years of education per worker (E). E is assumed to be constant. Note that each worker obtains the same amount of education. $G'(E) > 0$, which basically means that the more a worker is educated, the more human capital he/she has.

Savings rate (s) is exogenous. Capital stock depreciates at an exogenous rate δ. The accumulation of physical capital is given by

$$\dot{K}_t = sY_t - \delta K_t \tag{3}$$

Note that a dot over a variable denotes its time derivative. The technological progress changes over time at the exogenous rate g:

$$\dot{A}_t = gA_t \tag{4}$$

The last assumption of the model is that the number of workers grows at an exogenous rate n:

$$\dot{L}_t = nL_t \tag{5}$$

The main difference from the Solow model is the human-capital accumulation given by (2). Now define physical capital per unit of effective labor services as $k = K/(AG(E)L)$. Take the time derivative of this definition (time indices are dropped):

$$\dot{k} = \frac{\dot{K}}{AG(E)L} - \frac{(\dot{A}/A)K}{AG(E)L} - \frac{(\dot{G}/G)K}{AG(E)L} - \frac{(\dot{L}/L)K}{AG(E)L}$$

Since G is taken as constant, using (4) and (5), one obtains

$$\dot{k}_t = sf(k_t) - (n + g + \delta)k_t \tag{6}$$

Now define output per unit of effective labor as $y = Y/AG(E)L$. *Use this definition in (1):*

$$y_t = k_t{}^a \tag{7}$$

Substituting this in (6) yields:

$$\dot{k} = s(k_t)^a - (n + g + \delta)k_t \tag{8}$$

At the steady state $\dot{k} = 0$. Thus at the steady state k is determined as:

$$k^* = s/(n + g + \delta)^{1/(1-a)} \tag{9}$$

This is the same result obtained in the Solow model. Using (9) and the definition of y in (7) gives the steady state value of output per labor

$$(Y/L) = s/(n + g + \delta)^{a/(1-a)} AG(E) \tag{10}$$

Thus, as the number of the years of education per worker (E) increases, output per worker (*Y/L*) rises on the balanced growth path. This increase in proportional to *G(E)*. In other words, this simple specification shows that one of the underlying reasons behind large differences in income per capita among countries is their different levels of human capital.

2.2. Human Capital in Growth Regressions [2]

Hall and Jones (1999) and Klenow and Rodriquez-Clare (1997) analyze how income differences among countries are explained by differences in physical-capital accumulation, differences in human-capital accumulation, and other factors. They assume Cobb-Douglas production function as follows:

$$Y_i = K_i{}^a (A_i H_i)^{1-a} \tag{11}$$

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where i indexes countries and A represents all forces that determine output for given amounts of physical capital and labor services. Dividing both sides of (11) by number of workers (L_i) and taking natural logs yields:

$$ln\,(Yi/Li) = a\,ln\,(K_i/L_{\mathrm{i}}) + (1-a)\,ln\,(H_{\mathrm{i}}/L_{\mathrm{i}}) + (1-a)\,ln\,A_{\mathrm{i}} \qquad (12)$$

which shows the contribution of physical capital per worker (K_i/L_i), labor services per worker (H_i/L_i), and a residual (represented by the last term: $((1-a)\ln A_i)$) to output per worker. These studies estimate (12) by using data provided by the Penn World Tables[3], for physical-capital stock (K) and years of schooling (H). Furthermore, they assume that a is around 1/3 and H_i takes the form $\mathrm{e}^{\mathrm{G(Ei)}}\,\mathrm{L_i}$, where E_i is the average number of years of education of workers in country i. According to the results, the average output per worker in the richest group exceeds the average in the poor group by a factor of 31.7, on a log scale, this is a difference of 3.5. Furthermore, the difference in the average physical-capital intensity between two groups is 0.6, it is 0.8 in labor services per worker, and it is 2.1 in ln A. Therefore, the gap in log output per worker between richest and poorest countries is primarily due to differences in residuals, secondly it is due to differences in schooling, in other words education periods of workers in years, and lastly it is due to differences in physical-capital intensity. It can be clearly observed that differences in human capital are more effective than differences in physical-capital intensity in explaining cross-country income differences. When other determinants of human capital -such as differences in school quality, on-the-job training, informal human-capital acquisition, child-rearing, and a like- are taken into consideration, the impact of the human capital on the overall gap in log income between the richest and poorest countries increases.

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[3] These data are available online from the National Bureau of Economic Research

Barro and Sala-i-Martin (2004) conducts an econometric study on per capita growth rates. They estimate a series of regressions. Each regression is of the following type:

$$Dy_t = F(y_{t-1}, h_{t-1}, x)$$

where Dy_t denotes a country's per capita growth rate in period t, y_{t-1} is initial per capita GDP, and h_{t-1} is initial human capital per person -represented by average years of school attainment and life expectancy- and x is a vector of control variables. They carry out regressions for 72 countries between 1965-1975, 86 countries between 1975-1985, and 83 countries between 1985-1995. The estimations use initial per capita GDP (y_{t-1}), male upper-level schooling (as the determinants of educational attainment), life expectancy, fertility rate, government consumption ratio, rule of law, democracy, international openness, terms of trade, investment ratio, inflation rate, and dummy variables for 1975-1985 and 1985-1995 periods as the determinants of the growth rate.

Figure 2.1. The Partial Relationship Between Economic Growth and School-Attainment Variable (Barro and Sala-i Martin 2004, 524)
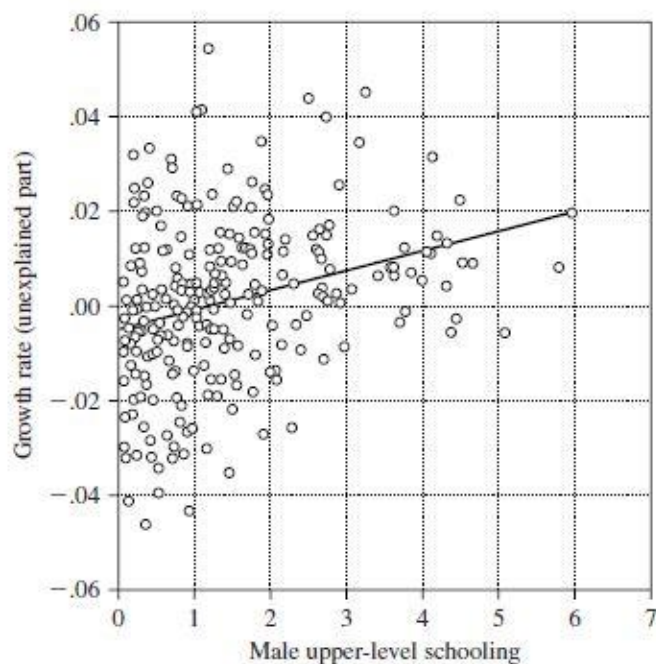
Figure 12.4
Growth rate versus schooling (partial relation). The diagram shows the partial relation between the growth rate of per capita GDP and the average years of school attainment of males at the upper level (higher schooling plus secondary schooling). The variable on the horizontal axis is measured in 1965, 1975, and 1985. See the description of figure 12.3 for the general procedure.

The estimated coefficient on male upper-level schooling is calculated as 0.0036 (s.e.=0.0016)[4]. This result means that the one-standard-deviation increase in male upper-level schooling raises the growth rate by 0.0036. Besides, when the analyses for low-income countries and high-income countries are examined, it can be clearly observed that the estimated coefficients of male upper-level schooling is positive for both groups of countries. Moreover, the striking finding is that the positive effect of educational attainment on growth rate is conspicuous for low-income countries, which is 0.0056 while it is 0.0020 for high-income countries. It means that the one-standard-deviation increase in male upper-level schooling raises the growth rate for low-income countries far more then high-income countries. Additionally, there is a

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[4] See Barro and Sala-i-Martin (2004, Figure 12.4)

positive partial relationship between economic growth and the school-attainment variable, which means that the increase in male upper-level schooling raises growth rate of per capita GDP (Figure 2.1.).

2.3. Education and Middle Income Trap

Studies published in recent years on middle income countries, which struggle to get rid of the middle income trap, emphasize that these countries should develop some characteristic features such as increasing national saving rates, raising R&D investment and innovation capacity, enhancing public sources which are used for increasing human capital quality, making a reform in labor market, raising total factor productivity, and so on.

For example, Eichengreen, Park, & Shin (2013) analyze growth slowdowns in fast-growing middle-income countries. They aim at determining basic reasons of such slowdowns that undermine convergence attempts. They show that there is a strong negative correlation between university attendees and graduates and growth slowdown. That is, an increase in the number of university attendees and graduates, leads to a decline in the possibility of a slowdown. It is further clarified in this study that this situation can be explained in economical terms as follows: more advanced education may be significant for countries abstaining from slowdown by producing technologically more sophisticated services and goods. In other words, the importance of technology is emphasized to avoid middle income trap, and it is stated that high levels of secondary and tertiary education is the most important means for that.

2.4. Education Performance of G-20 Countries

2.4.a. Average Year of Schooling

In this section, Barro and Lee's dataset[5] is used in order to quantitatively analyze education attainment among G-20 countries.

✓ *Education Attainment for Population Aged 15 and Over*

When the percentage of the population aged 15 and over is analyzed for the year 2010 in completing primary school, it is observed that the G-20 countries are ranked from the highest rate (% of population aged 15 and over) to the lowest rate as: Turkey, Argentina, Indonesia, Brazil, Italy, Mexico, France, India, Saudi Arabia, China, United Kingdom, Japan, Republic of Korea, South Africa, Australia, Russian Federation, Germany, Canada and USA, respectively[6].

Similarly, when the percentage of the population aged 15 and over in completing secondary school (for the year 2010) is examined, the G-20 countries are ranked from the highest rate to the lowest rate as Germany, South Africa, United Kingdom, Japan, Australia, France, USA, Republic of Korea, Italy, Canada, Argentina, Saudi Arabia, Brazil, India, Russian Federation, China, Indonesia, Turkey, and Mexico, respectively[7].

Lastly, the G-20 countries are ranked according to the percentage of the population aged 15 and over in completing tertiary education (for the year 2010) in descending order the following scheme emerges: Republic of Korea, USA, Russian Federation, Canada, Japan, Australia, United Kingdom, Germany, France, Mexico,

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[5] This dataset is available online from Barro-Lee Dataset
[6] see appendix A.1., Highest Level Attained: Primary Completed
[7] see appendix A.1., Highest Level Attained: Secondary Completed

Italy, Saudi Arabia, Brazil, Turkey, India, Indonesia, Argentina, China, and South Africa, respectively[8].

✓ *__Education Attainment for Population Aged 25 and Over__*

If G-20 countries are ranked according to the portion of population which only completed primary school in descending order the following list emerges: Turkey, Indonesia, Brazil, Mexico, Italy, France, China, Saudi Arabia, India, United Kingdom, Republic of Korea, Japan, South Africa, Australia, Argentina, Russian Federation, Canada, USA, and Germany, respectively[9].

The G-20 countries with highest percentage of the population aged 25 and over in completing secondary education (for the year 2010) are Germany, South Africa, United Kingdom, Japan, France, USA, Australia, Republic of Korea, Italy, Argentina, Canada, Brazil, Saudi Arabia, Russian Federation, India, Indonesia, China, Turkey, and Mexico, respectively[10].

Lastly, the G-20 countries with highest percentage of the population aged 25 and over in completing tertiary education (for the year 2010) are Republic of Korea, USA, Canada, Russian Federation, Australia, Japan, United Kingdom, Germany, Mexico, Saudi Arabia, France, Italy and Brazil (with the same figure), Turkey, India, Indonesia, Argentina, China, and South Africa, respectively[11]. Figure 2.3 shows a similar comparison among OECD countries. Turkey is one of the countries with lowest figures in terms of adults completing tertiary education; moreover, the average of Turkey is far below the OECD average.

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[8] see appendix A.1., Highest Level Attained: Tertiary Completed
[9] see appendix A.2., Highest Level Attained: Primary Completed
[10] see appendix A.2., Highest Level Attained: Secondary Completed
[11] see appendix A.2., Highest Level Attained: Tertiary Completed

<u>2.4.b. Quality of Education</u>

The Programme for International Student Assessment (PISA) is a study, in which scholastic performance of the 15-year-old school pupils on mathematics, science and reading is evaluated (OECD 2015). It is conducted by the OECD and it includes both OECD members and non-member countries (OECD n.d.). In this section, the latest PISA results published in 2015 are shown for the G-20 countries in order to analyze qualitative educational performance of these countries (Table 2.1.):

Country	Science		Reading		Mathematics		Science, Reading and Mathematics	
	Mean score in PISA 2015	Average three-year trend	Mean score in PISA 2015	Average three-year trend	Mean score in PISA 2015	Average three-year trend	Share of top performers in at least one subject (Level 5 or 6)	Share of low achievers in all three subjects (below Level 2)
Australia	510	-6	503	-6	494	-8	18.4	11.1
Canada	528	-2	527	1	516	-4	22.7	5.9
France	495	0	499	2	493	-4	18.4	14.8
Germany	509	-2	509	6	506	2	19.2	9.8
Italy	481	2	485	0	490	7	13.5	12.2
Japan	538	3	516	-2	532	1	25.8	5.6
Turkey	425	2	428	-18	420	2	1.6	31.2
USA	496	2	497	-1	470	-2	13.3	13.6
United Kingdom	509	-1	498	2	492	-1	16.9	10.1
China	518	M	494	M	531	M	27.7	10.9
Indonesia	403	3	397	-2	386	4	0.8	42.3
Republic of Korea	516	-2	517	-11	524	-3	25.6	7.7
Russia	487	3	495	17	494	6	13	7.7
CABA (Argentina)	475	51	475	46	456	38	7.5	14.5
Brazil	401	3	407	-2	377	6	2.2	44.1
Mexico	416	2	423	-1	408	5	0.6	33.8
Saudi Arabia								
India								
South Africa								

Table 2.1. PISA 2015[12]

❖ *__Programme for International Student Assessment (PISA) Test Results:__*

PISA 2015 was conducted for around 540,000 participating students in 72 countries (OECD n.d.). According to the results, Singapore was the top performer

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[12] *Further Information:* Results in Focus (PISA 2015)

country in all categories (This was not shown on the Table 2.1. since the table only portrayed the G-20 countries). The ranking according to mean scores of the countries are shown on Table 2.2. (Since there is no test results for Saudi Arabia, India and South Africa, only the results of 16 countries are listed):

Order	Science		Reading		Mathematics	
	Country	Score	Country	Score	Country	Score
1	Japan	538	Canada	527	Japan	532
2	Canada	528	South Korea	517	China	531
3	China	518	Japan	516	South Korea	524
4	South Korea	516	Germany	509	Canada	516
5	Australia	510	Australia	503	Germany	506
6	United Kingdom	509	France	499	Russia	494
7	Germany	509	United Kingdom	498	Australia	494
8	USA	496	USA	497	France	493
9	France	495	Russia	495	United Kingdom	492
10	Russia	487	China	494	Italy	490
11	Italy	481	Italy	485	United States	470
12	Argentina	475	Argentina	475	Argentina	456
13	Turkey	425	Turkey	428	Turkey	420
14	Mexico	404	Mexico	423	Mexico	408
15	Indonesia	403	Brazil	407	Indonesia	386
16	Brazil	401	Indonesia	397	Brazil	377

Table 2.2. Country Rankings by Categories (PISA 2015)

It is clearly seen on the Table 2.2 that Japan, Canada, China, and South Korea are the four highest-performing G-20 countries in science. Canada, South Korea, Japan, and Germany are, respectively, at the top of the list in reading. Lastly, Japan, China, South Korea, and Canada are the four countries having highest-performing in mathematics.

On the other hand, when both the rankings for all OECD countries and G-20 countries are examined, it is observed that the relationship between highest education performance and rapid growth of the Asian countries is not a coincidence. These

countries produce and export high value-added products thanks to their qualified trainings. In this regard, it will be useful to compare Turkey and South Korea.

2.4.c. Case Study: Turkey vs South Korea

Once had been behind Turkey in terms of many socio-economic indicators until the 1980s, South Korea was better than Turkey in the 2000s in terms of national income and industrialization. From the early 1960s to the 1980s, GDP per capita in Turkey was more than South Korea (Figure 2.2.). In 1965, GDP per capita of South Korea was $108.704 while GDP per capita of Turkey was $385.641. It means that GDP per capita in Turkey was 3,5 times as high as that of South Korea in 1965. In 2016, GDP per capita of South Korea was $27,539 while GDP per capita of Turkey was $10,800 and it was 2,5 times as high as that of Turkey.

Figure 2.2.GDP Per Capita (Current US$), Turkey vs South Korea (Worldbank 2017)
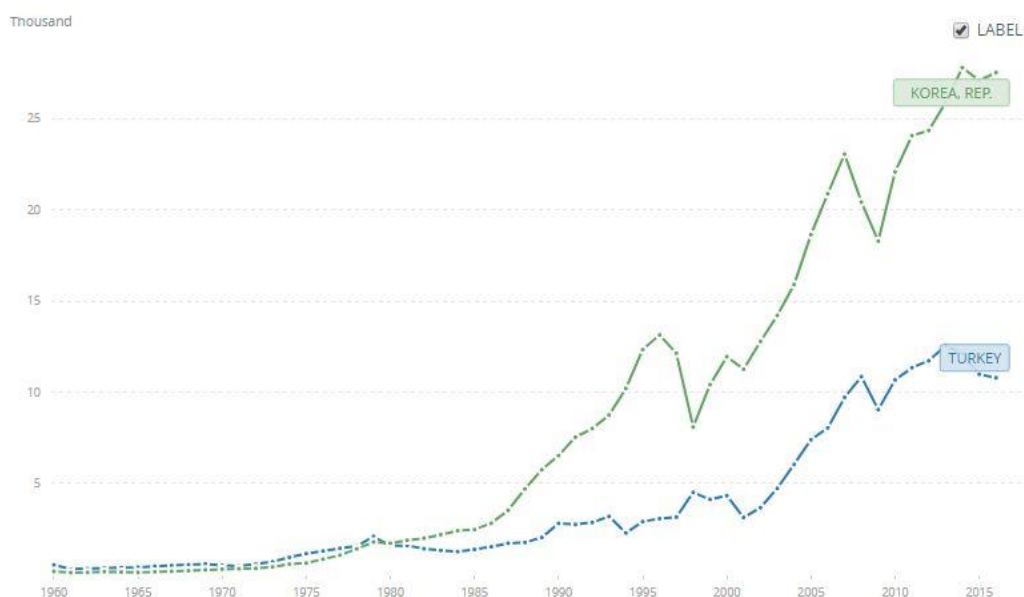
Moreover, output-side real GDP per capita at chained PPPs (in mil. 2011US$) of South Korea was $39,427 in 1965, while that of Turkey was $159,447. In 1980, GDP

per capita PPP of Turkey was \$331,021, while that of South Korea was \$189,564. Finally, in 2014, it increased to \$1,750.372 in South Korea, while it increased to \$1,525.255 in Turkey (Feenstra, Inklaar, & Timmer 2015).

	South Korea			Turkey		
Average years of total schooling (aged 15 and over, in 2010)[13]	12.05			7.05		
Average years of tertiary schooling (aged 15 and over, in 2010)[14]	1.43			0.29		
PISA Test Score (in 2015)[15] **Score** **World Ranking**	*Science* 516 11	*Reading* 517 7	*Maths* 524 7	*Science* 425 54	*Reading* 428 49	*Maths* 420 50
High Tech Exports in 2015 (% of manufactured exports)[16]	26.84			2.16		
Gross Capital Formation in 2016 (% of GDP)[17]	29.21			28.68		

Table 2.3. South Korea vs Turkey

Table 2.3. points out that there is a significant difference in particularly educational statistics between Turkey and South Korea. The first and second lines of the table show the educational statistics quantitatively, while third line shows the comparison of educational quality in South Korea and Turkey. Another striking difference is in the ratio of high-tech exports to total exports: 26.84 in South Korea, 2.16 in Turkey in 2015. Similarly, innovative structure of South Korea can also be seen in the following statistics: South Korea is the fourth in the world according to the total number of patents, second in the world regarding the number of per capita

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[13] see appendix A.1., Avg. Years of Total Schooling
[14] see appendix A.1., Avg. Years of Tertiary Schooling
[15] see PISA (2015)
[16] Data is available online from Worldbank (2017)
[17] Data is available online from Worldbank (2017)

patents, and seventh in the world in terms of R&D expenditures. Most of these achievements are explained by the researches with the educated qualified labor force and an education policy supporting this quality (such as Arslanhan S.and Kurtsal Y[18]., Dominguez G. and Mazumdaru S.[19], Gupta N., Healey D., Stein A. and Shipp S.[20]) In this context, there are 420 universities and colleges in South Korea, while there are around 200 of them in Turkey. Moreover, approximately 84% of individuals graduating from high school enroll at the university or college, and 40% of university students carry out scientific researches in South Korea.

2.5. Private and Public Costs and Benefits of Education

2.5.a. Private Costs and Benefits

Higher education has become the most important component of personal education in recent times. "'New growth theory' points the human capital formation as a key driver of economic growth, and higher education appears to be especially important in industrialized economies" (Chapman and Greenaway 2003, 2). As explained by growth theories, ideas and inventions affect growth rates. In this respect and in parallel with 'knowledge-based economy transition', the demand for personal higher education has increased all over the world. The increase in the demand for personal higher education in the world can be seen from the statistics on the gross enrollment ratio in tertiary education (Table 2.4.).

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[18] See: "To what South Korea Owes Success in Innovations? Implications for Turkey"
[19] See: "Why Innovation Is King in South Korea"
[20] See: "Innovation Policies of South Korea"

Region	1970	1980	1990	2014
North America	47.37%	53.78%	72.61%	84.03%
Europe and Central Asia	33.27%	31.92%	35.07%	62.07%
Latin America and Caribbean	5.96%	13.12%	16.2%	43.3%
Middle East and North Africa	5.65%	10%	12.71%	36.47%
East Asia and Pacific	1.43%	3.24%	5.21%	36.47%
South Asia	4.28%	4.48%	5.42%	20.84%
Sub-Saharan Africa	1.43%	2.12%	3.2%	8.59%

Table 2.4. Gross Enrollment Ratio in Tertiary Education (Roser and Ortiz-Ospina 2018)[21]

Personal demand for higher education has been consistently increasing all over the world. Along with the increment of personal demand for higher education, improvements in the universities both quantitatively and qualitatively have recently become more important than ever. Therefore, many countries give priority to allocating more financial resources for higher education and to providing substantial economic support. However, increasing demand for higher education versus increasing scarcity of public resources has obliged countries to seek private resources (Özekicioğlu 2013, 33). Additionally, it also includes considerable private benefits for graduates, as well as public benefits of higher education. This is the reason why countries look for new higher education funding schemes. On the following tables are shown separately the private and public benefits and costs for a man and a woman attaining tertiary education (2012) in the OECD countries.

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[21] Total enrollment ratio in tertiary education, regardless of age, is expressed as a percentage of the total population of the five-year age group

OECD Countries	Total Costs		Total Benefits		Internal Rate of Return	
	Man	*Woman*	*Man*	*Woman*	*Man*	*Woman*
Australia	75 800	76 700	285 400	223 800	9%	9%
Canada	56 100	57 300	225 500	238 500	9%	12%
Denmark	54 600	55 100	200 700	129 400	9%	7%
Finland	64 600	66 600	253 100	169 300	10%	7%
France	m	m	m	m	m	M
Germany	m	m	m	m	m	M
Italy	50 500	48 000	233 200	159 200	9%	8%
Japan	111 000	110 700	355 000	144 300	8%	3%
Netherlands	102 200	102 500	336 700	281 800	8%	7%
New Zealand	66 200	64 600	169 500	147 300	7%	7%
Sweden	m	m	m	m	m	M
Turkey	m	m	m	m	m	M
The United Kingdom	m	m	m	m	m	M
The United States	86 300	88 300	544 100	386 200	15%	12%
OECD Average	54 200	54 300	312 600	221 900	14%	12%

Table 2.5. Private Costs and Benefits for a Man and a Woman Attaining Tertiary Education in 2012 (OECD 2016)[22]

When the table above is examined, we can clearly state that the highest total private cost takes part in Japan for a man and a woman in 2012. On the other hand, the United States has the highest total private benefits for both a man and a woman. Furthermore, the total private benefits for a man and a woman are higher than the total private costs for all of the countries on the table. The United States has also the highest private internal rate of return for a man, which is 15%, and this is above the OECD average calculated as 14%. Similarly, Canada and the United States have the highest private internal rate of return for a woman equally, which is 12%, the same with the OECD average.

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[22] m means that data is not available.

2.5.b. Public Costs and Benefits

OECD Countries	Total Costs		Total Benefits		Internal Rate of Return	
	Man	*Woman*	*Man*	*Woman*	*Man*	*Woman*
Australia	35 000	35 100	163 700	125 000	9%	10%
Canada	44 800	44 900	268 200	96 400	9%	6%
Denmark	96 300	96 400	238 600	122 000	9%	3%
Finland	90 400	90 400	219 800	137 000	10%	4%
France	m	m	m	m	m	m
Germany	m	m	m	m	m	m
Italy	43 600	43 200	218 800	117 600	9%	6%
Japan	11 100	11 200	152 900	144 600	8%	28%
Netherlands	78 700	78 700	272 700	192 800	8%	7%
New Zealand	38 000	37 800	76 600	52 900	7%	4%
Sweden	m	m	m	m	m	m
Turkey	m	m	m	m	m	m
The United Kingdom	m	m	m	m	m	m
The United States	64 200	64 500	328 300	176 800	15%	8%
OECD Average	53 500	53 500	197 200	127 600	14%	8%

Table 2.6. Public Costs and Benefits for a Man and a Woman Attaining Tertiary Education in 2012 (OECD 2016)[23]

According to table 2.6. Denmark has the highest total public costs for a man within the OECD countries on the table, which is 96 300. Total public benefits for a man are also high but the highest country that the men benefited from the tertiary higher education is the United States. As for a woman, Denmark again has the highest total public costs. Netherlands has the highest total public benefit for a woman in 2012. When countries are examined for the public internal rate of return, it is observed that the United States has the highest public internal rate of return for a man whilst Japan has the highest public internal rate of return for a woman with a further ratio (%28), which is excessively above the OECD average.

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[23] m means that data is not available.

According to both of the tables, total costs are calculated as,

Total Costs=Direct Costs + Foregone Taxes on Earnings

Total Benefits are calculated as;

Total Benefit=Income Tax Effect + Social Contribution Effect + Transfers Effect + Unemployment Benefits Effect

Based on the Education at a Glance Report (2016, 47), the definitions are indicated as follows:

Private Direct Costs: Households' total expenditure on education, including net payments to educational institutions as well as payments for educational goods and services apart from educational institutions.

Income Tax Effect: The income tax effect is the discounted sum of additional level of income tax paid by the private individual or earned by the government over the course of a lifetime and associated with a higher level of education.

Social Contribution Effect: The social contribution effect is the discounted sum of additional employee social contribution paid by the private individual or received by the government over the course of a lifetime and associated with a higher level of education.

Social Transfers Effect: The transfers' effect is the discounted sum of additional social transfers from the government to the private individual associated with a higher education level over the course of a lifetime. Social transfers include two types of benefits: housing benefits and social assistance.

Unemployment Benefit Effect: The unemployment benefit effect is the discounted difference between the added earnings from unemployment (net unemployment benefit) associated with a higher level of attainment and the loss in net earnings from work when unemployed.

Total Private Benefits: The additional net income expected from an additional level of education, given that the individual successfully enters the labor market.

Total Public Benefits: The additional tax receipts expected by the state from an additional level of education, given that the individual successfully enters the labor market.

Internal Rate of Return is the interest rate on the investment in education at which the added earnings from education exactly cover the cost making an individual indifferent between investing in an additional degree and entering the labor market.

Consequently, with the increasing demand by the students for higher education and with increasing demand by the market for qualified human capital, more resources have begun to be transferred to higher education in recent years. This process has drastically increased particularly in Asian countries such as China, Japan, Malaysia, Thailand, and Indonesia. Armstrong and Chapman (2011, 10) expressed this increment as follows:

Notably, the percentage of national education expenditure to gross domestic product (GDP) increased from 2.4 per cent in 2001 to 3.8 per cent in 2007, but this is still well below other countries in the region such as Malaysia (8.1 per cent) and Thailand (4.6 per cent).

Thus, it can be clearly stated that the transfer of more resources to higher education has a positive effect on the growth of Asian economies. One of the most significant tools of delivering financial support to higher education is the design of higher education credit systems; thereby, more funds are being created for higher education.

CHAPTER III

ANALYZING BETTER PERFORMING STUDENTS AND BEST FOUNDATION UNIVERSITIES

It is necessary to determine which foundation universities have the highest rankings and which students are better performing in Turkey in order to design a credit system to match better performing students and best foundation universities. In this section, firstly, foundation universities with the highest rankings in Turkey will be determined according to three indicators, which are University Rankings made by the top ten university ranking agencies in the world, the most successful students' preferences as a result of university entrance exam, and the results of the questionnaire conducted to the students. Secondly, we will determine which students are better performing according to data from the Council of Higher Education (CoHE) indicating the university entrance exam success ratings of students placed at certain universities. Thus, we aim to point out that these students have the necessary scores from the university entrance exams to enter without scholarships to the foundation universities with the highest rankings. After these determinations are made, the credit system to be designed will be discussed in the next chapters.

3.1. Foundation Universities with the Highest Rankings in Turkey (The Best Foundation Universities)

3.1.a. University Rankings Made by the Top Ten University Ranking Agencies in the World

The ranking results published by the top ten university rating agencies in the world for the year 2016 was analyzed to determine best foundation universities in Turkey. These rankings are based on the core missions of universities like research, teaching, knowledge transfer and international outlook (Times Higher Education [THE], 2018). These agencies are Times Higher Education (THE), Webometrics, Scimago, Us News and World Report, Quacquarelli Symonds (QS), Leiden, Centre for World University Rankings (Cwur), Round University Ranking (RUR), Academic Ranking of World Universities (Arwu), University Ranking by Academic Performance (URAP). Moreover, the top 11 universities for Turkey listed by the top 10 university rating institutions in the world are shown on the Appendix A.3. In order to achieve impartial and comprehensive rankings for Turkey, we regenerated the ranking list by weighting the data as follows:

- According to rankings; if the university is on the top of the list among all universities in Turkey, we added 10 points.

- If the university is ranked as the second, we added 9.5 points and so on…

- If the university is not ranked on the lists of any of the abovementioned 10 institutions' rankings, we do not add points (Table 3.1.).

University Rankings in Turkey in 2016	
Rank1	10
Rank2	9.5
Rank3	9
Rank4	8.5
Rank5	8
Rank6	7.5
Rank7	7
Rank8	6.5
Rank9	6
Rank10	5.5
Rank11	5
Not in Rankings	0

Table 3.1. Method of Calculation To Identify Best Universities In Turkey

As an example to make the analysis more descriptive: Middle East Technical University (METU) is ranked at the top of two rating agencies and is also ranked as the second of the list of four institutions. Since THE listed METU as the 10th we add 5.5 points, Webometrics listed it as the 1st we add 10 points, Scimago ranked it as the second we add 9.5 points, US News and World Report listed it as the second we add 9.5 points, QS listed it as the 4th we add 8.5 points Leiden listed it as the 4th we add 8.5 points, CWUR listed it as the 1st we add 10 points, RUR listed it as the second rank we add 9.5 points, since METU is not included into the list of ARWU we do not add any points, and finally URAP listed it as the second we add 9.5 points. Thus, the score of METU is calculated as follows: 5.5+10+9.5+9.5+8.5+8.5+10+9.5+0+9.5= 80.5. When other universities in the list are calculated with the same method, we get the following final universities ranking list for the year 2016:

Rank	University	Total Score
1	*Metu*	80.5
2	*Istanbul Technical University*	75.5
3	*Istanbul Univ.*	72
4	*Hacettepe Univ.*	69.5
5	*Bilkent Univ.*	65
6	*Ankara Univ.*	57
7	*Boğaziçi Univ.*	53.5
8	*Gazi Univ.*	45.5
9	*Ege Univ.*	42.5
10	*Koç Univ.*	38.5
11	*Sabanci Univ.*	29
12	*Erciyes Univ.*	19
13	*Dokuz Eylül Univ.*	16.5
14	*Çukurova Univ.*	12
15	*Atilim Univ.*	8.5
16	*Çanakkale 18 Mart Univ.*	7
17	*Anadolu Univ.*	6.5
18	*Izmir Institute of Technology*	6
19	*Selçuk Univ.*	5.5
20	*Tobb University of Economics and Technology*	5
21	*Bahçeşehir Univ.*	5
22	*Mersin Univ.*	5
23	*Atatürk Univ.*	5
24	*Marmara Univ.*	5

Table 3.2. Best Universities in Turkey According To The Top 10 Rating Agencies For The Year 2016

When the results published by the top ten university rating agencies are taken together, we reach the results presented on the table 3.2. Therefore, the universities in the top ten are most rated and highest rankings in Turkey. Eventually, according to this indicator, there are two foundation universities in the top ten of the Table 3.2.: Bilkent and Koç Universities.

3.1.b. The Most Preferred Foundation Universities by the Most Successful Students

Data published by CoHE for the year 2016 demonstrates the average success rankings of the students settled in the universities (Yükseköğretim Program Atlası [YOKATLAS], 2018)[24]. In this section; according to this data, we investigate

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[24] This data is accessable online from https://yokatlas.yok.gov.tr/index.php

whether students with the highest points from university entrance exams prefer the universities on the Table 3.2. These pieces of data are shown separately for Department of Economics and Departments of Electric and Electronics Engineering for 2016 academic year. It is considered that one of these departments is chosen from the Social Sciences and the other from the Institute of Sciences.

Students can be settled in the Economics Department with their Turkish Mathematics-1 (TM-1) scores of the university entrance exam. The order of the top ten universities with the highest average success rankings for the Economics Department is shown on Table 3.3.

Universities	Scholarship	Success rankings of students (TurkishMathematics-1 scores)		
		Highest	Average	Lowest
Koç Univ.	Full scholarship Program	51	145	324
Boğaziçi Univ.	State University	3	1055	1650
İhsan Doğramaci Bilkent Univ.	Full scholarship Program	20	1769	2771
Koç Univ.	50% Scholarship Program	1936	3097	4540
Özyeğin Univ.	Full Scholarship Program	3006	3531	4843
Galatasaray Univ.	State University	2112	3581	4558
TOBB University	Full Scholarship Program	3660	5356	8105
Middle East Technical Univ.	State University	35	9266	12380
Istanbul Technical University (English)	State University	5293	10470	14088
Istanbul Bilgi Univ.	Full Scholarship Program	7942	14495	16840

Table 3.3. Top Ten Universities Mostly Preferred by Most Successful Students for Economics Department in 2016

On Table 3.3., Koç University (Full Scholarship Program) is the first university chosen by the most successful students. Then, the most successful students prefer to take education in Boğaziçi, Bilkent (full scholarship), Koç (50% scholarship), Özyeğin (full scholarship), Galatasaray, TOBB, METU, Istanbul Technical University, and Istanbul Bilgi University, respectively. Koç, Boğaziçi, Bilkent, TOBB, METU and Istanbul Technical University also take place in Table 3.2. When Table 3.2. and 3.3. are examined together, it is observed that two foundation universities are in the top ten of the both lists: Bilkent and Koç Universities.

It should also be noted that despite the observation that some of the successful students have also settled in Sabancı University, we cannot make comparison with these foundation universities because they are accepting students with Turkish Mathematics-3 taken from the university entrance exam. Besides, Sabancı University is not ranked as one of the top ten universities in Turkey in the ranking list by the top university ranking institutions in the world. For this reason, we could not evaluate the Sabancı University as one of the best foundation universities in Turkey.

Universities	Scholarship	Success rankings of students (MathematicsScience-4 scores)		
		Highest	Average	Lowest
Boğaziçi Univ.	State University	12	237	530
Koç Univ.	Full Scholarship Program	11	301	578
Ihsan Doğramaci Bilkent Univ.	Full Scholarship Program	8	338	711
Middle East Technical University	State University	47	1557	2402
Tobb University	Full Scholarship Program	406	2617	3638
Ihsan Doğramaci Bilkent Univ.	%50 Scholarship Program	1002	2710	3821
Koç Univ.	%50 Scholarship Program	2243	3375	4380
TOBB University	%75 Scholarship Program	6176	6620	7395
Özyeğin Üniv.	Full Scholarship Program	7881	9016	9965
Koç Univ.	%25 Scholarship Program	4796	14455	19204

Table 3.4. The Top Universities Mostly Preferred By Most Successful Students for Electric and Electronics Engineering Department in 2016

Electric and Electronics Engineering Department accepts students with Mathematics Science-4 (MF-4) scores. On table 3.4., the top ten universities that are preferred by the most successful students are listed according to average scores of the accepted students from highest to lowest. According to Table 3.4., Boğaziçi University is the first university preferred by the most successful students in 2016. When Table 3.2. and 3.4. are examined together, it is observed that two foundation universities are involved in the top ten of the both lists: Bilkent and Koç Universities.

3.1.c. Meeting the Finance Need of the Higher Education: A Field Research on Ankara Yıldırım Beyazıt University, Çukurova University, and Eskişehir Osmangazi University

3.1.c.i. Universe and Sample of the Research

With a survey study, the reactions of students to the borrowing system were analyzed, who had enough scores for the highest foundation universities (such as Bilkent and Koç Universities) but chose universities with lower rankings (such as Yıldırım Beyazıt, Çukurova, and Eskişehir Osmangazi Universities). In this context, the universe of this research study is composed of the $1^{s}t$ and 4th grade students, who chose Ankara Yildirim Beyazit (students in Economy, and Electric and Electronics Engineering Departments), Çukurova (students in Economy Department), and Eskişehir Osmangazi University (Electric and Electronics Engineering Departments) and who gained sufficient scores from the exams, but did not prefer receiving education in the Bilkent and Koç Universities in 2013 and 2016. It is stated in the literature that all individuals related with the research problem should be involved in the research (Lin, 1976, 146). In this research study, this method was used, which is called as complete counting. Therefore, the field research was not conducted on the sample, which represented a smaller portion, but on all of the students in the mentioned universe.

In determining these schools, the data provided by the Council of Higher Education (CoHE) about the student rankings for the year 2016 was used. There were also students, who had the sufficient scores for Bilkent and Koç, but chose Boğaziçi University, METU, Galatasaray University, Hacettepe University, Yıldız Technical University, Istanbul Technical University etc. However, since a part of

these universities are among the most preferred ones on the world ranking list of the abovementioned ten ranking institutions (see section 3.1.a and 3.1.b), the students in these schools were not included in the field research. Therefore, it was demanded that the general scope of the study should be composed of several state universities, which were not included in the world ranking list and/or the most preferred universities list. In this context, the students in Economy Departments in 2016 can be included in this study, who had sufficient scores for Bilkent and Koç Universities but preferred Ankara Yıldırım Beyazıt University, Anadolu University, Istanbul Medeniyet University, Çukurova University (English Program), Çukurova University (Turkish Program and Daytime Education), Ondokuz Mayıs University (English Program), Kocaeli University, Akdeniz University, Uludağ University, Sakarya University, Pamukkale University etc. The students in Electric and Electronics Engineering Department in 2016 can be included in this study, who had sufficient scores for Bilkent and Koç Universities but preferred Ankara Yıldırım Beyazıt University, Anadolu University (English Program), Eskişehir Osmangazi University (English Program), Çukurova University (English Program) etc.

The research study was limited to the first three state universities (in order to reach more students with sufficient scores) with the highest average scores of their students in TM-1 (Economy Department) and MF-4 (Electric and Electronics Engineering Department) which was formed by the CoHE. These universities for the Economy Departments in the year 2016 are, respectively, Yıldırım Beyazıt University (English Program), Anadolu University (English Program), and Çukurova University (English and Turkish program, daytime education); for the Electric and Electronics Departments (for the year 2016) Anadolu University (English Program), Yıldırım Beyazıt University (English Program), and Eskişehir Osmangazi University

(English Program). However, the presidency of the Anadolu University did not give permission for the survey study, therefore the two universities below the Anadolu, which were Çukurova and Eskişehir Universities, were included. Therefore, for the field research regarding the Economy Departments, Ankara Yıldırım Beyazıt University (English Program) and Çukurova University (English and Turkish program, daytime education); for Electric Electronic Department, Ankara Yıldırım Beyazıt University (English Program) and Eskişehir Osmangazi University (English Program) were determined (Survey Disallowance of Presidency of Anadolu University is presented in the Appendix A.4.).

For the year 2016, there were 57 students placed in the Ankara Yıldırım Beyazıt University (English program) in the Economy Department, 152 students placed in the Çukurova University (English and Turkish program, daytime education) in Economy Department, 49 students in the Ankara Yıldırım Beyazıt University (English program) in the Electric and Electronics Engineering Department (English program) and for the same department (English program) there were 90 students placed in the Eskişehir Osmangazi University. For the year 2013, there were 47 students placed in the Yıldırım Beyazıt University (English program) in Economy Department, 170 students placed in the Çukurova University (English and Turkish program, daytime education) in Economy Department, 47 students in the Yıldırım Beyazıt University (English program) in Electric and Electronics Engineering Department (English program) and for the same department (English program) there were 93 students placed in the Eskişehir Osmangazi University [25].

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[25] For the number of students placed at mentioned universities see:
https://dokuman.osym.gov.tr/pdfdokuman/2013/OSYS/Tablo4.pdf

3.1.c.ii. Method of the Research Study

Survey method, which is one of the quantitative research methods, was used in this research study.

In order to reach the maximum number of students selected from the universe explained in 3.1.c.i, field research was conducted on the students in the classrooms of the universities before the start of the classes, and survey study was applied comprising of six questions and demographic information of the students. The questions addressed to the students in the survey form were elaborately chosen to be clear and simple. Moreover, the number of the questions was limited to a figure in order not to take too much time of the students.

3.1.c.iii. Survey Form

A sample of the survey form is presented in the Appendix A.5. It was comprised of two parts: University choice and demographic information. The first part (university choice) was composed of six questions regarding influential factors on their choices, regarding their education quality perceptions of the first two foundation universities of the Table 3.2. (Bilkent and Koç Universities) and the state universities below the list in the Table 3.2., whether their financial limitation was an obstacle for placing in the foundation universities, concerning their financial limitations and borrowing as a solution to their financial limitations. The last part (demographic information) was formed to determine the demographic features of the subjects.

The third question of the survey was open-ended. The data obtained from this question was interpreted by transforming it into closed-ended via grouping the answers.

The answer choices of the survey questions were prepared as yes/no, gradation, and multiple-choice.

3.1.c.iv. Data Analysis of the Research Study and Statistical Methods Used

The analysis of the survey was conducted via SPSS 21 package program. The results of the research study were formed by using frequency, percentage, and crosstab analyses. The frequency results explain the frequency of the answers given by the students in terms of the amount, number, total etc. of the choices; while the percentages explain the distribution of the same answers. Chi-square independence tests were applied in the crosstab analyses.

3.1.c.v. General Information about the Sample of the Research Study

The universe of the research was determined based on the number of the students placed in 2013 and 2016 years in the Çukurova University (Economy Department, daytime education and English program), Eskişehir Osmangazi University (Electric-Electronics Engineering Department), Ankara Yıldırım Beyazıt University (Economy and Electric-Electronics Engineering Department). Accordingly, among the 705 students only 253, whose scores were sufficient for the Bilkent and Koç Universities but who preferred not to place there, were included in the survey. General information about the students participating in the survey is presented in the Appendix A.6.a.

3.1.c.vi. Findings of the Research Study

There are the findings of the questions addressed to the students concerning their perspectives about their basic criteria for university choices, their city preference in choosing the university, their income expectations after graduation, and their viewpoints about suggested borrowing system. The data regarding the demographic features of the students are presented in the Appendix A.6.

➢ **Frequency and Percentage Distribution Analyses**

✓ *Percentage Distribution Analysis of the Answers Regarding University Choices*

The percentage distribution of the evaluations regarding the basic criteria of the students in making their university choices are on Table 3.5.

Basic Criteria in Choosing the University	Completely not Important	Not Important	Moderately Important	Important	Too Important	Total
			Percent			
The City of the University	1,6	2,0	11,1	47,8	37,2	**99,6**
Employment Opportunity After Graduation	0,4	2,0	3,6	25,3	68,8	**100,0**
Facilities of the University	3,2	4,7	34,0	41,5	16,6	**100,0**
Choices of Fast Friends	19,4	39,1	25,3	11,5	4,7	**100,0**
Internship Opportunity of the University	2,8	7,9	18,6	39,9	30,8	**100,0**
Education Language	0,4	0,8	9,5	43,5	45,5	**99,6**
Sufficiency of the Academic Cadre	0,8	1,2	7,1	37,5	53,4	**100,0**
General Image of the University	1,2	1,6	15,0	43,5	38,7	**100,0**
Scholarship Opportunity	4,7	14,2	31,2	27,7	21,7	**99,6**
Education Fees	3,6	9,5	22,9	33,2	30,8	**100,0**
Student Dormitory Opportunity	7,9	15,4	15,4	37,5	23,7	**100,0**
Interest of the Administrative Staff	2,4	7,5	15,0	36,8	37,9	**99,6**
Social and Cultural Activities	2,8	9,5	30,0	30,8	26,5	**100,0**

Table 3.5. Evaluations of the Basic Criteria that the Students Grounded on While Making Choice
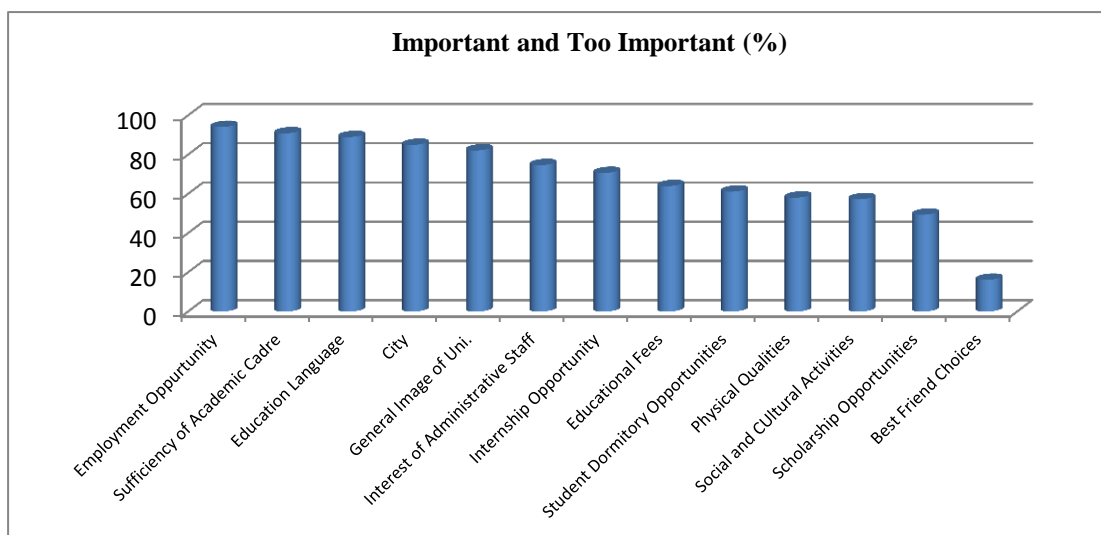
Graphic 3.1. Distribution Graphic of the Students About University Choices as Important and Too Important

The first five criteria that the students attached the most importance are, respectively, employment opportunity after graduation, sufficiency of academic cadres of the university, education language, the city of the university, and general image of the university.

- ✓ *Frequency and Percentage Distribution Analyses of Student Answers Regarding City Preference*

The distribution graphic of the cities that the students mostly preferred and not preferred is on Graphic 3.2.
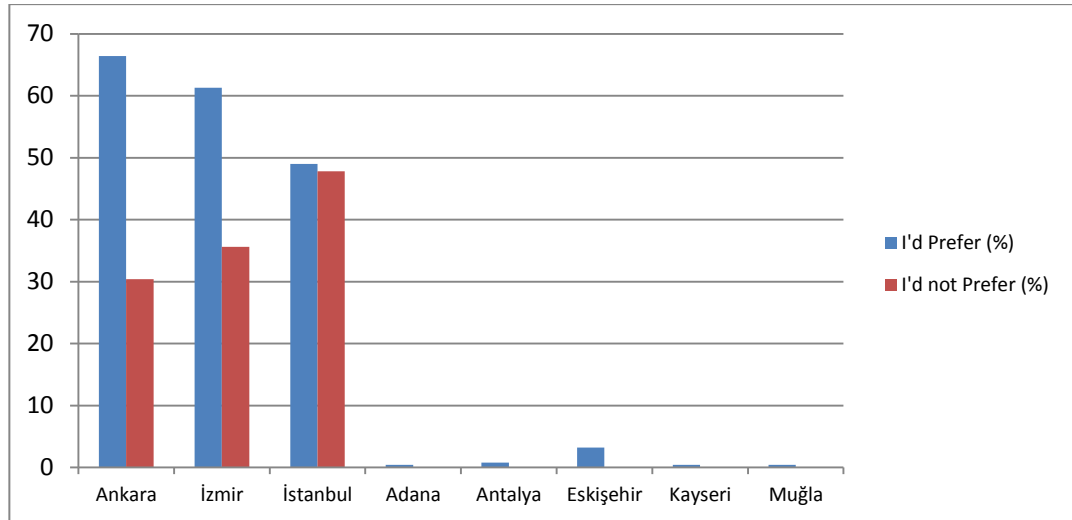
Graphic 3.2. Distribution Graphic of the Cities that the Students Preferred

According to the Graphic 3.2., the distribution of the students who answered as "I'd prefer" for Ankara was 66,4 %, while it was 61,3 % for Izmir, and 49 % for Istanbul. Moreover, the rate of the students preferring and not preferring Istanbul is quite close to each other.

    ✓ *Frequency and Percentage Distribution Analyses of Student Answers*
       Regarding Their Monthly Income Expectations in the First Five Years
       After Graduation

Graphic 3.3. shows the distribution of student answers regarding their monthly income expectations in the first five years after graduation.
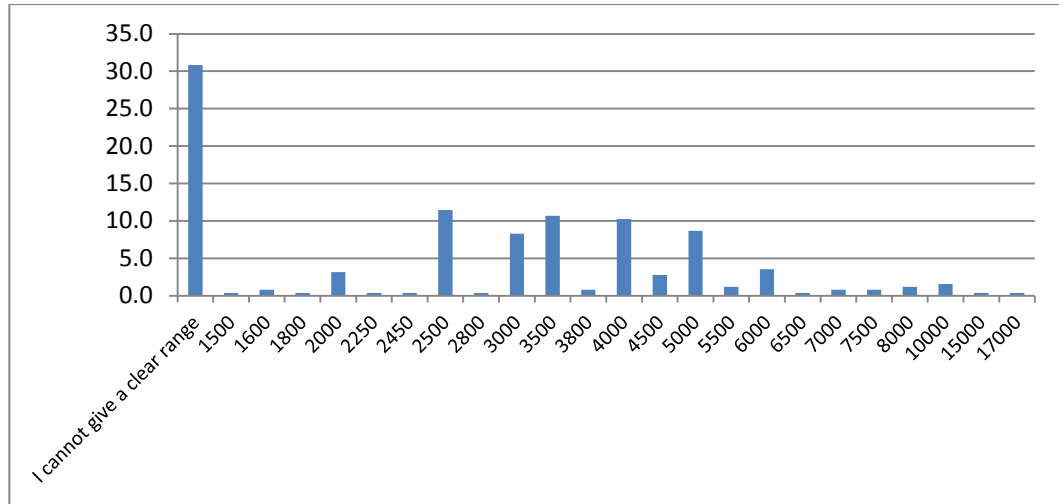
Graphic 3.3. Monthly Income Predictions of the Students in the First Five Years After Graduation

It is observed on Graphic 3.3., that one third of the students participating in the survey did not have any predictions about their monthly income in the first five years after graduation. 11,5 % of them expected an amount around 2,500 TL, while 10,7 % predicted to have around 3,500 TL, and 10,3 % around 4,000 TL.

✓ *Distribution Analyses of the Student Perceptions Regarding the Quality of the Universities*

The students were asked for scoring the education quality of eighteen universities according to their perceptions. There were fourteen state universities, and four foundation universities, such as Koç, Bilkent, Sabancı, and TOBB Universities among the ones to be scored. In determining the fourteen state universities, it was based on that most or a part of the students in these state universities had sufficient scores from the entrance exams for the four foundation universities but they did not prefer to be placed in these foundation universities, instead chose lower ranked state universities on the list presented in 3.1.a. Accordingly, the perceptions of the students regarding the education quality of the state and foundation universities were examined, aiming to analyze whether the motive behind the refusal for the foundation universities was their perception of the quality in these universities.

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Percentage distribution of the student answers regarding the mentioned universities are presented on Table 3.6.

	Very Bad	Bad	Medium	Well	Very Well	No Idea
			%			
Anadolu Uni.	2,00	4,70	29,2	37,9	10,7	15,4
Bilkent Uni.	0,00	0,80	5,10	22,1	54,5	17,0
Çukurova Uni..	2,80	10,7	28,1	25,7	10,3	22,5
Ege Uni.	0,40	1,20	13,0	44,7	22,1	18,2
Erciyes Uni.	2,80	11,1	33,6	11,9	0,80	39,1
Eskişehir Osmangazi Uni.	2,00	7,50	30,0	32,0	7,10	20,9
Gazi Uni.	2,40	5,10	19,4	39,9	22,5	10,3
İst. Medeniyet Uni.	5,10	8,30	14,6	5,90	5,10	59,3
Koç Uni.	0,40	0,40	4,30	16,6	66,4	11,9
Marmara Uni.	0,00	0,40	12,3	37,5	34,4	15,0
Pamukkale Uni.	4,30	16,2	27,7	8,70	0,80	41,9
Sabancı Uni.	0,00	0,80	7,10	22,5	42,3	27,3
Sakarya Uni.	5,50	13,0	33,6	9,10	1,60	37,2
Selçuk Uni.	4,70	11,1	34,0	17,8	2,00	30,4
Süleyman Demirel Uni.	3,60	15,4	28,5	9,10	1,60	41,9
TOBB Uni.	0,80	3,60	5,90	24,5	33,2	30,8
Uludağ Uni.	1,60	7,10	39,1	23,3	4,00	24,1
Yıldırım Beyazıt Uni.	5,90	7,10	29,2	17,0	7,10	33,2

Table 3.6. Percentage Distribution of the Students Regarding the Quality of the Universities

Ranking of the Universities Stated as "Medium Quality" by the Students:
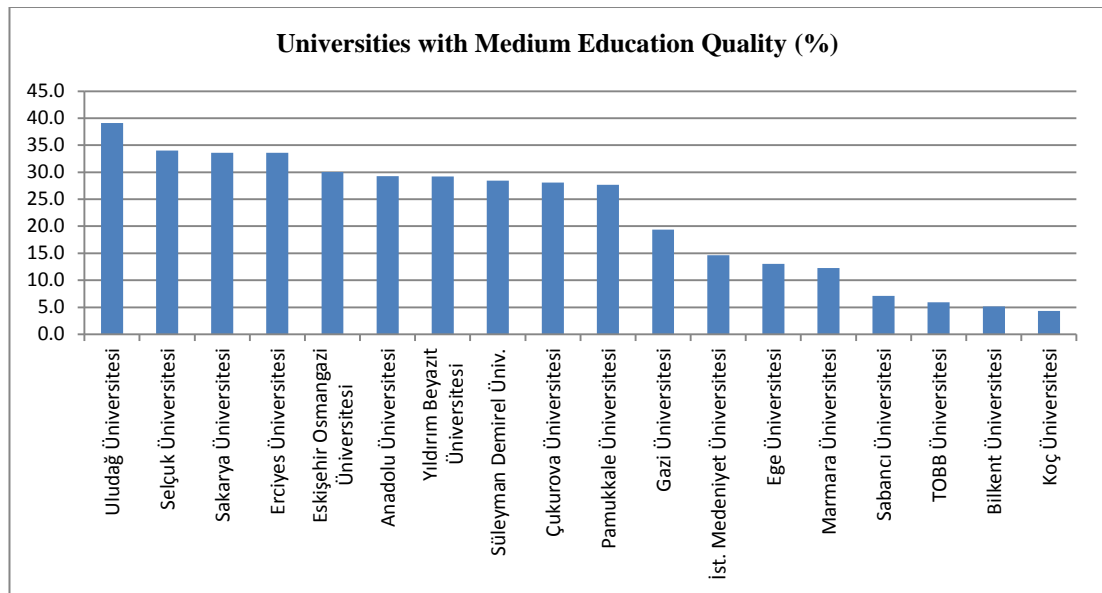
Graphic 3.4. Ranking of the Universities Stated as "Medium Quality" by the Students

The ranking of the "medium quality" universities according to the answer of the students are shown on Graphic 3.4. According to the graphic, almost one-third of the students evaluated Uludağ, Selçuk, Sakarya, Erciyes, Eskişehir Osmangazi, Anadolu, Yıldırım Beyazıt, Süleyman Demirel, Çukurova, and Pamukkale Universities, respectively, as the "medium quality" universities. These universities comply with the rankings of the best ten ranking institutions and they are not among the best ranked universities, either ranked below on the list or not ranked at all.

Ranking of the Universities Stated as "Very Well" by the Students:
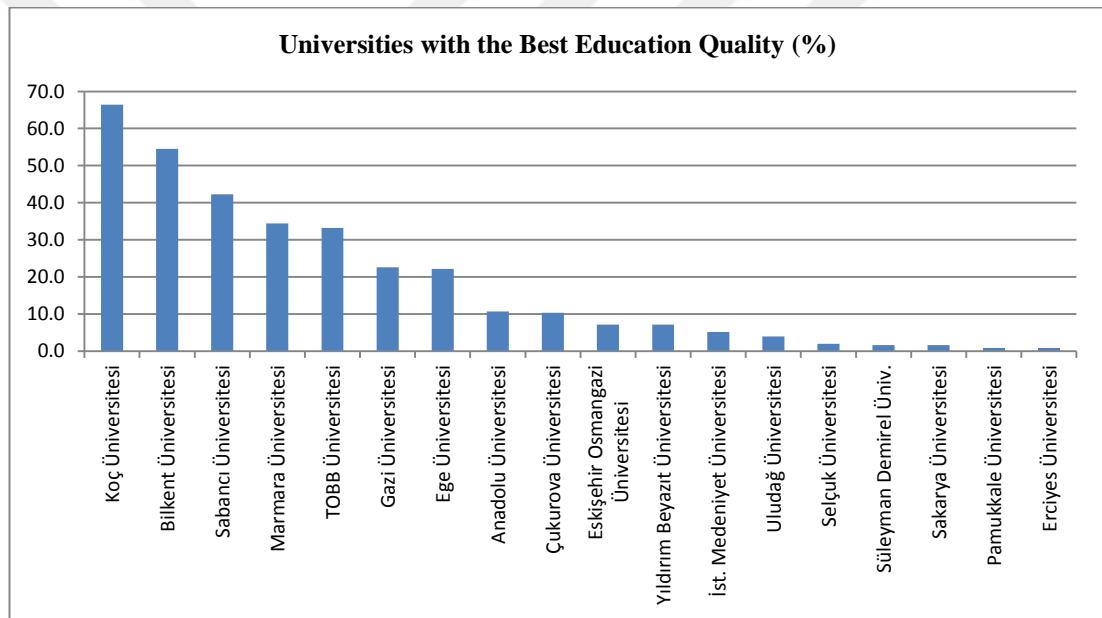
Graphic 3.5. Ranking of the Universities Stated as "Very Well" by the Students

The ranking of the "very well" universities according to the answer of the students are shown on Graphic 3.5. The universities that were evaluated as "very well" by more than 30% of the students were, respectively, Koç, Bilkent, Sabancı, Marmara, and TOBB Universities. According to these results, it was observed that all of the four foundation universities included in the survey were ranked in the first five according to the answers of the students. Koç and Bilkent Universities among these

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four, were both in the ranking list of the best ranking institutions (Table 3.2.) and in the best ten universities list preferred by the best students (Table 3.3. and 3.4.).

When the answers regarding the education quality of the universities were examined, it was observed that more than half of the students preferred universities evaluated by their own as "medium quality", although they had sufficient scores for paid education in Bilkent and Koç Universities, whose education quality was evaluated by the same students as "very well". This fact proves that the motive behind refusing these mentioned foundation universities is not the education quality, it is due to financial limitations of the students.

✓ *Percentage Distribution of the Student Attitudes Towards Education in Koç and Bilkent Universities with Full Scholarship*

Would You Prefer Taking Education in Bilkent and Koç Universities with 100% Scholarship ? (%)
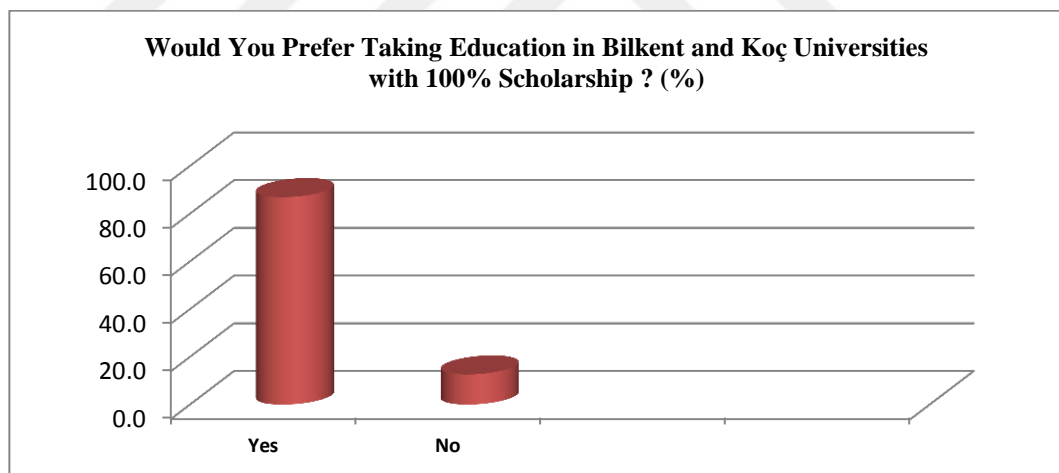
Graphic 3.6. Preferences Concerning Education in Bilkent and Koç Universities with %100 Scholarship

In this question, the attitudes of the students concerning the possibility of education in Bilkent and Koç Universities with full scholarships (without making any payments) were analyzed. As observed on Graphic 3.6., 87% of the students stated that if they had sufficient scores for these universities with full scholarship, they would prefer, 12,6 % of the students mentioned that they would not.

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Additionally, the students, who mentioned 'no', were asked to state the reason of their refusal. The refusal reasons of 29 out of 32 students, who said 'no', is presented on Graphic 3.7.

Reasons of Refusing Education with 100% Scholarship
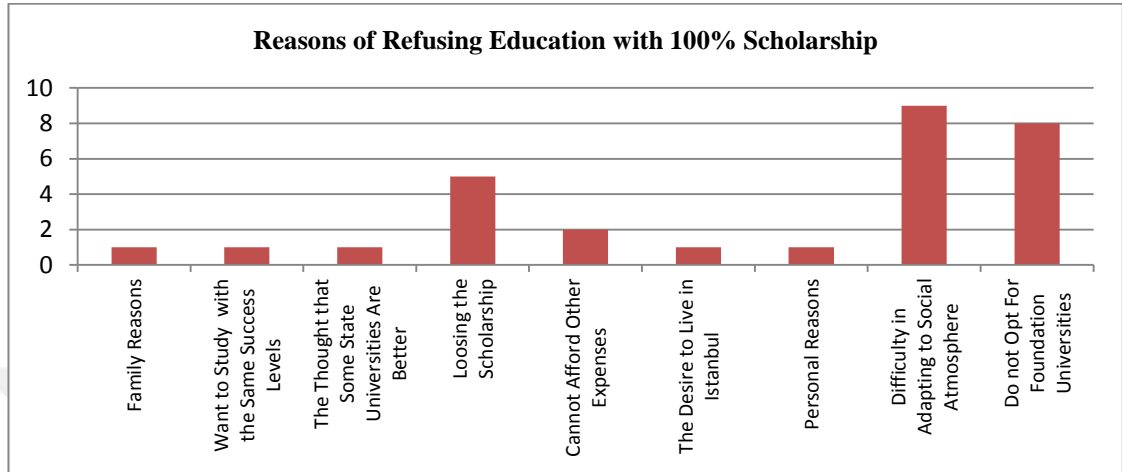
 Graphic 3.7. Refusal Reasons of the Students for Education with 100% Scholarship in Bilkent and Koç Universities

According to Graphic 3.7., several of the most common reasons for the students to refuse education with 100% scholarship are as follows;

a) Anticipation about being unable to adapt to the social atmosphere,

b) Preference in favor of quality state universities in case they have sufficient scores for full scholarship,

c) Anticipation of a possible cut in their scholarship payments in case they fail to be successful, thus having to pay for education, which they cannot finance.

✓ *Percentage Distribution Analyses of the Students Regarding Their Attitudes Towards Education in Bilkent and Koç Universities via Borrowing*

The attitudes of the students towards education in Koç and Bilkent Universities via borrowing are shown on Graphic 3.8.
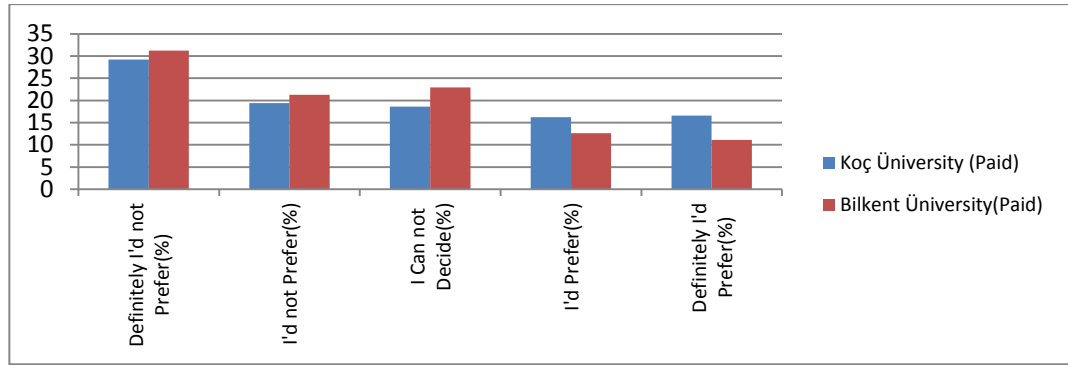
Graphic 3.8. Student Attitudes Towards Education in Koç and Bilkent Universities via Borrowing. According to the results on Graphic 3.8., 32,8% and 23,7% of the students think positive about receiving education via borrowing in Koç and Bilkent Universities, respectively. The rate of the ones, who oppose this idea, is 48,6 % for Koç University and 52,5 % for Bilkent University.

Although the students ranked Koç and Bilkent Universities as "very well" and 87% of them preferred to receive education with full scholarship in these universities, a reason of their refusal for paid education via borrowing might be that 30,8% of them could not predict their income in the first five years after graduation. Since approximately 30% of them predict a monthly salary in between 2,500-4,000 TL, the refusal for borrowing might be because of apprehension that they will be unable to repay the loan. In this point, the most important factor is to form the repayment system for the students as flexible as possible in order to encourage them to borrow for education. The fact that one-third of the students predicted lower incomes particularly for the first years after the graduation makes it crucial to arrange the repayments as income contingent.

On the other hand, that 68,8% of the students consider employment after graduation as an answer for the question regarding the university choices, manifests their anxiety about employment. Therefore, one of the reasons of their refusal for

paid education might be their anxiety about being unable to repay the loan, since they will be jobless after graduation.

It is considered that the students, who said 'I cannot decide', would think positive about borrowing system if the possible borrowing program would be more flexible for the students.

> **Crosstab Analyses**

In this part of the study, the systematic relation among some of the survey questions was analyzed. In this context, H_0 hypothesis was hypothesized on the assumption that there was no relation between the variables. The statistical significance of the H_0 hypothesis was analyzed via Chi-square test conducted on the variables on the crosstab. The crosstab analyses were presented under certain sub-titles via groupings.

✓ *Crosstabs According to the Education Quality of Koç and Bilkent Universities*

The relation between the perceptions of the students about the education quality of Koç and Bilkent Universities and their full scholarship education preferences was analyzed, and the results are as follows.

		%100 scholarship		
		Yes	**No**	**Missing**
	Very Bad	0,0%	100,0%	0,0%
	Bad	100,0%	0,0%	0,0%
Koç University	*Medium*	72,7%	27,3%	0,0%
	Well	83,3%	16,7%	0,0%
	Very Well	91,7%	8,3%	0,0%
	No Idea	73,3%	23,3%	3,3%
	Total	**87,0%**	**12,6%**	**0,4%**

Table 3.7. The Preference of the Students About Education with 100% Scholarship in the Koç University Considering its Education Quality

According to the results of the analysis on the Table 3.7., 91,7 % of the students, who stated that the education quality of the Koç University was "very well", accepted education with 100% scholarship. However, 8,3% of them refused, although they stated "very well".

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,447[a]	10	,009

Table 3.8. Chi-Square Tests for the Education Quality of Koç University and Education Preference in This University with 100% Scholarship

The results obtained from the Chi-Square Test regarding the survey results are on Table 3.8. According to this, since Asymp. Sig. (2-sided) value is p=0,009<0,05, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between the perceived education quality of the Koç University and education preference with 100% scholarship in this university.

		%100 Scholarship	
		Yes	**No**
	Bad	50,0%	50,0%
	Medium	84,6%	15,4%
Bilkent University	*Well*	85,7%	14,3%
	Very Well	92,8%	7,2%
	No Idea	74,4%	25,6%
	Total	**87,3%**	**12,7%**

Table 3.9. The Preference of the Students Regarding Education with 100% Scholarship in the Bilkent University Considering its Education Quality

According to the Table 3.9., 92,8% of the students, who consider that the education quality of the Bilkent University is "very well", preferred education with 100% scholarship. However, 7,2% of them refused education with 100% scholarship, although they think that the quality is "very well".

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,860[a]	4	,012

Table 3.10. Chi-Square Tests for the Education Quality of the Bilkent University and Education Preference in this University with 100% Scholarship

According to Table 3.10., since Asymp. Sig. (2-sided) value is $p=0,012<0,05$, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between the perceived education quality of the Bilkent University and education preference with 100% scholarship in this university.

		Koç Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Koç Üniv.	*Very Bad*	100,0%	0,0%	0,0%	0,0%	0,0%
	Bad	100,0%	0,0%	0,0%	0,0%	0,0%
	Medium	18,2%	18,2%	27,3%	27,3%	9,1%
	Well	33,3%	26,2%	23,8%	14,3%	2,4%
	Very Well	25,0%	17,3%	16,7%	18,5%	22,6%
	No Idea	46,7%	23,3%	20,0%	3,3%	6,7%
	Total	**29,2%**	**19,4%**	**18,6%**	**16,2%**	**16,6%**

Table 3.11. Preferences of the Students Regarding Education in the Koç University via Borrowing Considering its Education Quality

According to Table 3.11., 42,3% of the students, who mentioned that the education quality of the Koç University was "very well", thought positive about paid education via borrowing, while 41,1 % of them opposed.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,218[a]	20	,104

Table 3.12. Chi-Square Tests for Education Quality of the Koç University and Education Preference in this University via Borrowing

According to Table 3.12., since Asymp. Sig. (2-sided) value is $p=0,104>0,05$, H_0 (Null Hypothesis) hypothesis is not rejected, thus, it is determined that there is no relation between the perceived education quality of the Bilkent University and education preference via borrowing in this university.

Bilkent Paid Education						
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Bilkent Uni.	*Bad*	0,0%	0,0%	50,0%	0,0%	50,0%
	Medium	25,0%	41,7%	25,0%	8,3%	0,0%
	Well	36,4%	23,6%	21,8%	9,1%	9,1%
	Very Well	26,1%	17,4%	23,9%	17,4%	15,2%
	No Idea	44,2%	27,9%	20,9%	4,7%	2,3%
	Total	**31,2%**	**21,6%**	**23,2%**	**12,8%**	**11,2%**

Table 3.13. Preferences of the Students Regarding Education in the Bilkent University via Borrowing Considering its Education Quality

According to Table 3.13., 32,6 % of the students, who mentioned that the education quality of the Bilkent University was "very well", thought positive about paid education via borrowing, while 43,5% of them opposed. Compared to the results concerning the Koç University, these results manifest that more students than the ones who mentioned "very well" were indecisive about education in Bilkent University via borrowing and even thinking negative about this idea.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25,028[a]	16	,069

Table 3.14. Chi-Square Tests for Education Quality of the Bilkent University and Education Preference in this University via Borrowing

The results obtained from the Chi-Square Test regarding the survey results are on Table 3.14. According to this, since Asymp. Sig. (2-sided) value is $p=0,069>0,05$, H_0 (Null Hypothesis) hypothesis is not rejected, thus, it is determined that there is no relation between the perceived education quality of the Bilkent University and education preference via borrowing in this university.

When the attitudes of the students towards borrowing program were evaluated, it was observed that among the students, who mentioned "very well" for the Koç and Bilkent Universities, the proportion of the ones who thought positive about paid education via borrowing were almost half the number of the students, who preferred to receive education in these schools without paying. This fact proves the financial limitations that these students face while making preferences. Accordingly, in order

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to encourage students to participate in a possible borrowing program, the repayment conditions should be formed as flexible as possible.

✓ *Crosstabs Concerning Education via Borrowing Program*

		Koç Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Household Income	*500-1000*	33,3%	41,7%	25,0%	0,0%	0,0%
	1001-1500	40,7%	11,1%	7,4%	14,8%	25,9%
	1501-2000	32,1%	17,9%	14,3%	17,9%	17,9%
	2001-3000	36,5%	15,4%	21,2%	19,2%	7,7%
	3001-4000	23,0%	24,6%	24,6%	18,0%	9,8%
	4001-5000	14,3%	14,3%	22,9%	25,7%	22,9%
	5001+	32,4%	18,9%	10,8%	5,4%	32,4%
	Total	**29,4%**	**19,0%**	**18,7%**	**16,3%**	**16,7%**

Table 3.15. Preferences of the Students Regarding Education in the Koç University via Borrowing Considering the Household Income

It is observed on Table 3.15. that as the household income increases, the figure of the students, who are thinking negative about education in the Koç University via borrowing, decreases in a vast scale. As per the students thinking negative about education via borrowing, only the figure of the students increases, who are in 2001-3000 TL and 5001 TL and over income groups. However, almost half (48,6%) of the students, who are in 4001-5000 TL income groups, think positive about education via borrowing in the Koç University.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38,068[a]	24	,034

Table 3.16. Chi-Square Tests for Monthly Household Income and Education Preference in the Koç University via Borrowing

The results obtained from the Chi-Square Test regarding the survey results are on Table 3.16. According to this, since Asymp. Sig. (2-sided) value is $p=0,034<0,05$, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between the monthly household income and education preference in the Koç University via borrowing.

		Bilkent Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Household Income	*500-1000*	33,3%	41,7%	25,0%	0,0%	0,0%
	1001-1500	40,7%	11,1%	7,4%	14,8%	25,9%
	1501-2000	35,7%	25,0%	17,9%	10,7%	10,7%
	2001-3000	41,2%	17,6%	25,5%	11,8%	3,9%
	3001-4000	26,2%	23,0%	34,4%	8,2%	8,2%
	4001-5000	14,7%	20,6%	20,6%	32,4%	11,8%
	5001+	32,4%	21,6%	18,9%	8,1%	18,9%
	Total	**31,6%**	**21,2%**	**23,2%**	**12,8%**	**11,2%**

Table 3.17. Preferences of the Students Regarding Education in the Bilkent University via Borrowing Considering the Household Income

It is observed on Table 3.17. that as the household income increases, the figure of the students, who are thinking negative about education in the Bilkent University via borrowing, decreases in a vast scale. As per the ones thinking negative about education via borrowing, only the figure of the students increases, who are in 1501-2000 TL, and 5001 TL and over income groups. The students, who think positive about education via borrowing in the Bilkent University, are composed of the ones in 4001-5000 TL income groups.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42,355[a]	24	,012

Table 3.18. Chi-Square Tests for Monthly Household Income and Education Preference in the Bilkent University via Borrowing

The results obtained from the Chi-Square Test regarding the survey results are on Table 3.18. According to this, since Asymp. Sig. (2-sided) value is $p=0,012<0,05$, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between the monthly household income and education preference in the Bilkent University via borrowing.

It is an expected result that there is a relation in between the household incomes of the students and their attitudes towards borrowing program. Moreover, since there is a positive relation, it is considered that the more the household income, the higher number of students will think positive about education via borrowing.

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Although the existence of the positive relation is generally presented on Table 3.15. and 3.17., it is not manifested clearly.

		Koç Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
%100 Scholarship	*Yes*	24,1%	20,0%	19,5%	18,2%	18,2%
	No	62,5%	15,6%	12,5%	3,1%	6,3%
	Missing	100,0%	0,0%	0,0%	0,0%	0,0%
	Total	**29,2%**	**19,4%**	**18,6%**	**16,2%**	**16,6%**

Table 3.19. Preferences of the Students Regarding Education via Borrowing in the Koç University Considering 100% Scholarship Preferences

According to Table 3.19., 36,4% of the students, who preferred education in the Koç University with 100% scholarship, thought positive about paid education via borrowing. 44,1% of the students, who preferred education with 100% scholarship, thought negative about education via borrowing, which showed their negative attitudes towards financing their education via borrowing. According to this, almost half of the students participating in the survey did not want to establish a lien on the long term via borrowing.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,846[a]	8	,002

Table 3.20. Chi-Square Tests for Education Preference in the Koç University with 100 % Scholarship and Education Preference in this University via Borrowing

According to Table 3.20., since Asymp. Sig. (2-sided) value is $p=0,002<0,05$, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between education with 100% scholarship in the Koç University and education via borrowing in this university.

		Bilkent Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
%100 Scholarship	*Yes*	27,1%	22,5%	23,9%	14,7%	11,9%
	No	59,4%	15,6%	18,8%	0,0%	6,3%
	Missing	100,0%	0,0%	0,0%	0,0%	0,0%
	Total	**31,5%**	**21,5%**	**23,1%**	**12,7%**	**11,2%**

Table 3.21. Preferences of the Students Regarding Education via Borrowing in the Bilkent University Considering 100% Scholarship Preferences

According to Table 3.21., 49,6% of the students, who preferred education in the Bilkent University with 100% scholarship, thought negative about paid education via borrowing. The majority of the students, who do not prefer education in the Bilkent University with 100% scholarship, as expected, do not prefer paid education in this university via borrowing, either. Moreover, compared to the Bilkent University, it was observed that more students than the ones, who prefer education in the Koç University with 100% scholarship, think positive about education via borrowing in the same university.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,887[a]	8	,022

Table 3.22. Chi-Square Tests for Education Preference in the Bilkent University with 100 % Scholarship and Education Preference in This University via Borrowing

According to Table 3.22., since Asymp. Sig. (2-sided) value is $p=0,022<0,05$, H_0 (Null Hypothesis) hypothesis is rejected, thus, it is determined that there is a relation between education with 100% scholarship in the Bilkent University and education via borrowing in this university.

Koç Paid Education					
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Income Prediction	*I cannot give a clear range*	38,5%	16,7%	19,2%	15,4%	10,3%
	1500	0,0%	0,0%	100,0%	0,0%	0,0%
	1600	50,0%	0,0%	50,0%	0,0%	0,0%
	1800	0,0%	100,0%	0,0%	0,0%	0,0%
	2000	50,0%	25,0%	12,5%	0,0%	12,5%
	2250	0,0%	0,0%	0,0%	0,0%	100,0%
	2450	100,0%	0,0%	0,0%	0,0%	0,0%
	2500	24,1%	20,7%	24,1%	13,8%	17,2%
	2800	0,0%	100,0%	0,0%	0,0%	0,0%
	3000	19,0%	28,6%	23,8%	23,8%	4,8%
	3500	22,2%	22,2%	14,8%	18,5%	22,2%
	3800	0,0%	50,0%	50,0%	0,0%	0,0%
	4000	30,8%	7,7%	23,1%	19,2%	19,2%
	4500	28,6%	57,1%	14,3%	0,0%	0,0%
	5000	31,8%	9,1%	9,1%	27,3%	22,7%
	5500	0,0%	33,3%	0,0%	33,3%	33,3%
	6000	33,3%	11,1%	22,2%	0,0%	33,3%
	6500	0,0%	0,0%	100,0%	0,0%	0,0%
	7000	0,0%	0,0%	0,0%	50,0%	50,0%
	7500	0,0%	50,0%	0,0%	0,0%	50,0%
	8000	0,0%	33,3%	0,0%	0,0%	66,7%
	10000	25,0%	25,0%	0,0%	25,0%	25,0%
	15000	0,0%	0,0%	0,0%	100,0%	0,0%
	17000	0,0%	0,0%	0,0%	0,0%	100,0%
	Total	**29,2%**	**19,4%**	**18,6%**	**16,2%**	**16,6%**

Table 3.23. Education Preferences of the Students in the Koç University via Borrowing Considering the Income Predictions in the First Five Years After Graduation

As is observed on Table 3.23., more than half of the students, who cannot give a range about their incomes in the first five years after graduation, think negative about education in the Koç University via borrowing. The students, who predict higher incomes in the first five years after graduation, think positive in a vast scale about education in the Koç University via borrowing.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	90,724[a]	92	,518

Table 3.24. Chi-Square Tests for Monthly Income Predictions in the First Five Years After Graduation and Education Preferences in the Koç University via Borrowing

According to Table 3.24., since Asymp. Sig. (2-sided) value is $p=0,518>0,05$, H_0 (Null Hypothesis) hypothesis is not rejected, thus, it is determined that there is no relation between monthly income predictions of the students in the first five years after graduation and education preference in the Koç University via borrowing.

Bilkent Paid Education						
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Income Prediction	*I cannot give a clear range*	40,3%	16,9%	26,0%	10,4%	6,5%
	1500	0,0%	0,0%	100,0%	0,0%	0,0%
	1600	50,0%	0,0%	50,0%	0,0%	0,0%
	1800	0,0%	100,0%	0,0%	0,0%	0,0%
	2000	50,0%	25,0%	12,5%	0,0%	12,5%
	2450	100,0%	0,0%	0,0%	0,0%	0,0%
	2500	24,1%	27,6%	27,6%	10,3%	10,3%
	2800	0,0%	100,0%	0,0%	0,0%	0,0%
	3000	23,8%	23,8%	28,6%	19,0%	4,8%
	3500	25,9%	18,5%	29,6%	11,1%	14,8%
	3800	0,0%	50,0%	50,0%	0,0%	0,0%
	4000	30,8%	26,9%	15,4%	11,5%	15,4%
	4500	28,6%	71,4%	0,0%	0,0%	0,0%
	5000	31,8%	9,1%	22,7%	31,8%	4,5%
	5500	0,0%	0,0%	33,3%	33,3%	33,3%
	6000	44,4%	11,1%	0,0%	0,0%	44,4%
	6500	0,0%	0,0%	0,0%	0,0%	100,0%
	7000	0,0%	0,0%	0,0%	50,0%	50,0%
	7500	50,0%	50,0%	0,0%	0,0%	0,0%
	8000	0,0%	33,3%	33,3%	0,0%	33,3%
	10000	25,0%	25,0%	0,0%	25,0%	25,0%
	15000	0,0%	0,0%	0,0%	100,0%	0,0%
	17000	0,0%	0,0%	100,0%	0,0%	0,0%
	Total	**31,5%**	**21,5%**	**23,1%**	**12,7%**	**11,2%**

Table 3.25. Education Preferences of the Students in the Bilkent University via Borrowing Considering the Income Predictions in the First Five Years After Graduation

As is observed on Table 3.25., 57,6% of the students, who cannot give a range about their incomes in the first five years after graduation, think negative about education in the Bilkent University via borrowing. That the students cannot predict their incomes after graduation can be the motive behind their refusal to receive education in this university via borrowing.

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99,279[a]	88	,193

Table 3.26. Chi-Square Tests for Monthly Income Predictions in the First Five Years After Graduation and Education Preferences in the Bilkent University via Borrowing

According to Table 3.26., since Asymp. Sig. (2-sided) value is $p=0,193>0,05$, H_0 (Null Hypothesis) hypothesis is not rejected, thus, it is determined that there is no relation between monthly income predictions of the students in the first five years after graduation and education preference in the Bilkent University via borrowing.

The results on Table 3.23. and 3.25., even if not statistical, manifest the importance of the future income predictions on the attitudes of the students towards

borrowing program. Similarly, majority of the students, who either cannot give a range or predict a lower income, think negative about the borrowing program. This result manifests the importance of starting the repayments after the graduate begins to gain an income and organizing it as income-contingent, in order to encourage the students to participate in the program. Thus, it is considered that the negative approach of the students towards borrowing program due to anticipation about being unable to repay the debt can be prevented.

3.1.c.vii. Survey Results

Result 1: The rankings made by the students about universities based on their perceptions concerning education quality match up with the rankings of the ten ranking institutions and/or the preferences in the university placements. Although quite a few number of students think that Çukurova, Eskişehir Osmangazi, and Ankara Yıldırım Beyazıt Universities are "very well", and though half of the students had sufficient scores for Bilkent and Koç Universities, about which they thought "very well", they did not prefer these universities. Moreover, the vast majority of the students mention that they think positive for education in Koç and Bilkent Universities without payments. This fact proves that the motive behind refusing these universities is not the education quality performances of the universities, but it is due to financial limitations of the students.

Result 2: A big portion, such as 87%, of the students thinks positive about education without payment in Koç and Bilkent Universities; however, almost half of them think negative about education via borrowing. This proves that at least half of the students make short-term preferences and do not prefer establishing a lien on the long term.

Result 3: The most important criterion that the students take into consideration in university preference is the employment and approximately one-third of them cannot predict their monthly income in the first five years after graduation. This can be a reason for the students to refuse education via borrowing in the Koç and Bilkent Universities, although they perceive the quality of education in these universities as "very well". Accordingly, this is an indicator of their apprehension about employment after graduation and an indicator of their being unable to predict their future incomes. Therefore, it is considered that repayments beginning after employment and installments being directly proportional with the income will encourage most of the students to think positive about borrowing program.

Result 4: At least one of every four students mentioned that they would prefer the Koç and Bilkent Universities in case they have financial support. In this sense, if the refusal of these students for these universities due to financial limitations is prevented by creating a borrowing program, these students will have the opportunity to receive education in these schools. Thus, the inequality of opportunity these students face would be eradicated.

3.2. Better Performing Students in Turkey

Better performing students are composed of the ones, who had sufficient scores from university entrance exam for paid education in the best foundation universities but preferred the lower universities on the ranking list stated in part 3.1 instead of foundation universities. For example, they are the students whose scores are not sufficient for the universities higher on the list such as METU, ITU, and Boğaziçi, but whose scores are sufficient for paid education in the best foundation universities such as the Bilkent and Koç. Refusing paid education in these foundation

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universities, these students receive education in lower universities on the list such as Uludağ, Ankara, Yıldırım Beyazit, Akdeniz, Anadolu etc. Although the students of only Ankara Yıldırım Beyazıt, Çukurova, and Eskişehir Osmangazi Universities are included in the survey, all of the better performing students examined in this part are in Economy and Electric-Electronics Engineering Departments.

3.2.a. University Entrance Exam Results

In this part; based on the data published by CoHE, the students will be analyzed, who had sufficient scores from the university entrance exam for the best foundation universities, but did not prefer these universities. Moreover, they have a higher score than the scores of students who are placed in these foundation universities. The students from Department of Economics and Departments of Electric and Electronics Engineering will be subjects of the analysis. Firstly, the data about the students in Economics Department will be analyzed, and secondly, the data for the students in Electric and Electronics Engineering Department will be analyzed.

3.2.a.i. Results for the Department of Economics

The scores of some or all of the students in universities below the list mentioned in section 3.1 are sufficient for education in Bilkent and/or Koç Universities. On the table below, the highest, average and lowest score rankings of the students in these schools are presented.

Universities	Score rankings of students (TurkishMathematics-1 scores)		
	Highest	Average	Lowest
Yıldırım Beyazıt Univ. (English)	53,132	96,450	110,921
Anadolu Univ. (English)	71,136	117,081	131,734
Çukurova Univ. (English)	85,204	161,222	189,881
Kocaeli Univ.	97,704	194,625	223,130
İzmir Katip Çelebi Univ.	133,052	203,265	229,714
Yalova Univ.	174,760	222,204	238,080
Uludağ Univ.	84,445	203,958	243,159
Akdeniz Univ.	1,610	198,257	243,345
Muğla Sıtkı Koçman Univ. (English)	133,792	210,325	244,151
Sakarya Univ.	138,062	233,018	267,121
On Dokuz Mayıs Univ.	137,944	227,746	270,778
Pamukkale Univ. (English)	155,862	252,921	293,094
Selçuk Univ.	81,581	249,761	295,833
Erciyes Univ.	61,526	250,670	296,156
Kırıkkale Univ.	152,554	266,326	309,539
Gaziantep Univ.	114,288	269,307	338,448
İstanbul Medeniyet Univ.	152,309	302,692	343,032
Mersin Univ.	142,696	294,258	347,499

Table 3.27. Score Rankings of Students Placed in Economics Department in State Universities with Lower Rankings

Universities	Scholarship	Success rankings of students (TurkishMathematics-1 scores)		
		Highest	Average	Lowest
Koç University	non-scholarship	1,973	49,491	72,566
Koç University	%25 scholarship	4,616	20,459	32,200
Bilkent University	non-scholarship	59,683	116,61	167,109
Bilkent University	%50 scholarship	8,374	44,292	57,669

Table 3.28. Score Rankings of Students Placed in Economics Department in the Best Foundation Universities

Some of the state universities with lower rankings or without any rankings are given on Table 3.27. (See: Table 3.2, 3.3, 3.4, and 3.6). Accordingly, all of the students placed in these universities with the highest scores can be placed in the Bilkent University at least via paid education (Table 3.28). All of the students of Yıldırım Beyazıt, Anadolu (English Program) and Istanbul Medeniyet Universities would receive paid education in the Bilkent University. Even some of these students could be placed in the Bilkent University with 50% scholarship, and some other part of them could be placed in the Koç University via paid education. The scope of this study comprises these students, who are called as better performing students. For

instance; the lowest score of student placed in Bilkent University via paid education is 167,109, but there are students having higher scores (such as the students with the scores between 50,000 and 100,000) and also they preferred the universities with the lower rankings.

3.2.a.ii. Results for the Electric and Electronics Engineering Department

In this section, we aim to determine which students are better performing for the Electric and Electronics Engineering Department. When 2016 data is analyzed; it is observed that students in Çukurova, Abdullah Gül, Erciyes, Anadolu, Yıldırım Beyazıt and Eskişehir Osmangazi Universities are better performing. The score rankings of the students studying at these universities range from approximately 20,000 to 90,000. These are shown on the table 3.29.

Universities	Score rankings of students (MathematicsScience-4 scores)		
	Highest	Average	Lowest
Çukurova Univ.	22,350	46,576	53,816
Abdullah Gül Univ.(English)	10,053	15,660	18,317
Eskişehir Osmangazi University(English)	23,491	43,424	47,925
Anadolu University(English)	24,532	37,841	41,953
Yildirim Beyazit University (English)	18,706	36,977	42,168
Erciyes Univ.	32,168	67,137	80,671

Table 3.29. Score Rankings of Students Placed in State Universities with Lower Rankings in Electric and Electronics Engineering Department

Universities	Scholarship	Score rankings of students (MathematicsScience-4 scores)		
		Highest	Average	Lowest
Koç University	non-scholarship	467	16,951	34,813
Koç University	%25 scholarship	4,796	14,455	19,204
Bilkent University	non-scholarship	4,642	17,667	26,706
Bilkent University	%50 scholarship	1,002	2,710	3,821

Table 3.30. Score Rankings of Students Placed in the Best Foundation Universities in Electric and Electronics Engineering Department

The students studying at these universities are better performing according to success rankings. Moreover, these universities do not meet the criteria when deciding the best state universities in Turkey. For instance, all of the students of Abdullah Gül

University would receive education in the Koç University with 25% scholarship, or receive paid education in the Bilkent and Koç Universities. However, refusing education in these universities, the students preferred Abdullah Gül University, which is lower on the list in section 3.1. Moreover, all of the students with the highest rankings in the universities on Table 3.29. could receive education in these mentioned foundation universities (See: Table 3.30.). As an example, score of the student with highest ranking at Yıldırım Beyazıt University is 18,706. However, this student could get into Bilkent University with non-scholarship program or Koç University with %25 scholarships, but she/he did not prefer to study in these universities. In addition, the student had a much higher score than students placed in these foundation universities via paid education. These students are characterized as the *better performing students* for the Electric and Electronics Engineering Department.

CHAPTER IV

FINANCING HIGHER EDUCATION WITH LOANS

4.1. Private and Public Student Loans

Student loans, an essential part of financing tertiary education, are widely used in a significant number of countries such as Canada, the United States, several European countries, most of the Latin American countries, the Caribbean, and some of the African and Asian countries (Woodhall 2001). There are basically two types of student loan schemes: private and public.

According to Eurostat (2009), classification of loans as private or public is based on three main criteria:

1. Who controls the managing institution of the loan scheme? If managing institution is independent, loan schemes are sorted as private, but if managing instution is controlled by the government it is considered as public.

2. Where does the fund come from? If more than fifty percent of the revenues are provided by private sources, loan scheme is classified as private. But if the private resources are lower than 50%, it is classified as public.

3. Who undertakes most of the risk? It is actually about the goverments' role as a guarantor. If the government does not provide guarantee to financial instutions, the scheme is sorted out as private. If the government provides guarantee completely or significantly, the loan scheme is considered as public, as well (European Centre for the Development of Vocational Training [CEDEFOP] 2012, 27).

As defined in The Institute for Higher Education (IHEP) Policy Report (2006, iii); private loans are the schemes which are outside the government funding and also are not guaranteed by the government in case of a default. Banks, some agencies, some loan companies or other financial institutions may provide these loans to students. In a broad sense, private student loans can be defined as the loans funded by private commercial financial institutions.

There are many features of private student loans. First of all, students are required to meet certain credit criteria in order to benefit from these loans. Secondly, credit limits for private loans are determined by the creditor and do not exceed the amount of university costs minus any financial aid the student receives (Ionescu and Simpson 2016, 8). Thirdly, interest rates are variable based on the credit history of the student, the repayment period, and the total amount of the loan. Finally, the private student loans are either not guaranteed by the government or the government guarantee is limited (Ionescu and Simpson 2016, 8). Furthermore, the sustainability and the success of the private student loans depend on market conditions. Significant deterioration in these conditions can highly affect the student loan market.

There are many reasons why some countries generally prefer implementing private loans to public loans. First of all, it is argued that private sector works more efficiently than the government (Özekicioğlu 2013, 52). Secondly, private financial institutions generally have less administrative costs than the government (Özekicioğlu 2013, 52). Thirdly, banks are more specialized in lending compared to (non-bank based) the government schemes (Albrecht and Ziderman 1992, 74).

Fourthly, total amount of public loans are generally limited, therefore students have to search for private funding.

The first usage of private student loans historically dates back to the 1960s. The United States Aid Fund was the earliest example that enabled students to borrow from commercial sources (IHEP 2006, 5). Since 1960s, the USA has become one of the leading countries in private student lending (further discussed in section 4.2.). More than the half of the undergraduate students in the United States borrow through private loans to finance their higher education (Ionescu and Simpson 2016, 1). Other countries which implement private loan schemes are Canada, Thailand, Austria, Hungary, Netherlands, Cyprus, Germany (master loans), Slovenia, Portugal, Spain (CEDEFOP 2012, 29).

Country	Managing institution is controlled by	Main source of income is provided by	Main providers of the loans	Government guarantee to loans
Austria	Independent	Private, deposits	Building society banks	No
Hungary	Government control is limited, institution is largely independent	Private bonds and international support	Special public instution	Yes, but for the institution, not for separate loans
Netherlands private loan	not controlled by the government	Private banks	Retail banks	No
Cyprus		Private	Retail banks	No
Germany master loans		Private	Retail banks	No
Slovenia		Private	Retail banks	No
Portugal		Private	Retail banks	Yes but limited
Spain(Catalonia)		Private	Retail banks	No

Table 4.1. European Countries Classified As Private Loan Schemes (CEDEFOP 2012, 29)

Table 4.1. summarizes some of the basic features of European private loan schemes.

The main disadvantages of private schemes for the borrower compared to public schemes are as follows:

First, since a collateral is required, accesibility of private student loans is more difficult than public loans. Besides, credit history of a student, which closely depends on the student's and his/her parents' economic/credit background, is important as well. Therefore, low-income students face serious obstacles in access to loans. Most of the low-income students can not borrow from the private system (Ionescu and Simpson 2016, 34).

The second disadvantage of a private loan system is that it is based on market interest rates. Furthermore, market interest rates can increase in real terms particularly in stressful times, elevating the costs for a new borrower. Fluctuations in market interest rates affect loans in changing interest rates. Moreover; the borrowing costs of a student may differ, depending on her/his credit history. In other words, students who have never used credit before and/or students with low credit ratings can find themselves borrowing with higher interest rates. Furthermore, they need a cosigner most of the time. In addition to these disadvantages, market interest rates are generally higher than interest rates of public loans.

The third disadvantage of a private loan scheme compared to a public loan scheme is that it has a shorter repayment period. This means that each repayment of a certain amount in a private loan scheme is higher than each repayment of the equal amount in a public loan scheme.

Fourth; while it is possible to arrange repayments as a percentage of annual income of a graduate in public loans, particularly in ICL (Income-contingent loan); repayments are generally independent of future income of graduates in private loan

schemes. It is argued that this can be a significant disadvantage especially for low-income graduates:

> Because repayments are based on time, those who enter the workforce in a low-paying job or who have poor labour-market outcomes at some stage will face a large repayment hardship, which could force default. There is also credit risk for default for the students as it can ruin their credit rating and ability to finance into the future (Armstrong and Chapman 2011, 4).

Fifth; while public schemes allow payment deferments in the case of death, permanent disability or a bankruptcy, this is generally not the case for private loan schemes. On the other hand, there are some private lending institutions that may defer repayments in case of temporary payment difficulties stemming from economic conditions (IHEP 2006, 11).

There is disadvantage for lenders as well,which mainly arises due to absence of or limited guarantee in case of a borrower default. This mainly generates from the fact that borrowing to students is too risky for lenders due to uncertainties in student loans. The first is the uncertainty about the success of the student to graduate from the university. The second is the uncertainty about finding a job after graduation within the specified period to repay the loan. The third is about the sufficient income of the graduate student to be able to repay the loan. These explain the reluctance of lenders. Therefore, the government guarantee is required in order to remove this reluctance. On the other hand, one way to reduce default risk is hedging. For this reason, private loan originator can issue of securities backed by student loans, generally by bundling student loans with other types of loans. These student loans

are being sold to the investors afterwards, which helps a lender instution to enlarge its funding source.

4.1.b. Public Student Loan Schemes

According to Eurostat's criteria; the managing institution is generally controlled and funding is commonly provided by the government in a public loan scheme. For example, if a management institution is private but more than fifty percent of the resources or a full/significant loan repayment guarantee are provided by the government, it is classified as a public loan scheme (CEDEFOP 2012, 27). In a public loan scheme, there are both direct and indirect government supports. For instance, providing a full or partial guarantee for repayments of a graduate borrowing from a private instution, loan scheme corresponds to an indirect support; whereas if the government charges below market interest rates or writes off a loan, it is called a direct support.

Table 4.2. provides some important features of public loan schemes in Europe. It is notable that pure public loan schemes are observed in a limited number of countries. What's more common is that private loan schemes are supported (either funded or repayments guaranteed) by the government.

Country	Managing institution is controlled by	Main source of income is provided by	Main providers of the loans	Government guarantee to loans
France	Government	Private banks	Retail banks	Yes
Poland	Government	Public	Retail banks	Yes
Germany (Federal Education and Training Assistance Act)		Public	Special public institution	No
United Kingdom	Government	Public	Special public institution	No
Estonia		Private	Retail banks	Yes
Italy		Private	Retail banks	Yes
Latvia		Private	Retail banks	Yes
Lithuania		Private	Retail banks and credit unions	Yes
Luxembourg		Private	Retail banks	Yes
Slovekia		Public	Public instutions	No
Bulgaria		Public	Retail banks	Yes
Iceand		Public	Special public institution	Yes
Turkey		Public	Special public institution	No

Table 4.2. Public Loan Classification of European Countries (CEDEFOP 2012, 29)

There are important advantages of public loan schemes compared to private loan schemes. First, in some cases, repayments start above a prespecified threshold. Second, credit history of a student is not taken into account, which facilitates access to credit for students. Third, there is no requirement for a collateral and/or a cosigner. Fourth, since borrowing conditions are affected less by current economic conditions, students do not face with significant uncertainies. Fifth, general interest rates charged for a typical student loan is much lower than the market interest rates. Sixth, in some cases repayments are indexed to CPI provided that a graduate income increases at least at the rate of consumer inflation. Such an indexation offers advantages for the borrower. Seventh, repayment periods are considerably longer.

4.2. Repayment Types of Loans

There are three types of student loan schemes based on repayment methods: mortgage-type, income-contingent, and hybrid loan schemes. All of these loan schemes are implemented as public or private student loans.

4.2.a. Mortgage-Type Loans

In mortgage-type loan programs interest rates, payment installments, and the term of loan are generally fixed. Furthermore, this type of loans are generally provided by private institutions with the government providing direct or indirect support.

The implementation of mortgage-type loan dates back to the 1990s. The United Kingdom was the first country to introduce this scheme (Barr 1993, 724). United States and Canada are two countries that implement effectively this type of loan schemes (Amatya 2009, 6).

The specific features of mortgage-type loan are:

Fixed Repayments: In a typical mortgage-type loan, the borrower makes equal repayments on a monthly basis (Özekicioğlu 2013, 57). While this feature is an advantage for a lender, it is a disadvantage for a borrower, and particularly for the low-income students. Considering the fact that a typical wage of a new graduate is usually low and then gradually increases through her/his working life, fixed repayments pose a problem for a borrower.

Repayment Period: There is a certain repayment period varying from 10 to 20 years. Repayment period is specified according to total debt and the number of installments.

Interest Rates: Interest rates are generally fixed (Amatya 2009, 6).

Lenders: This types of loans are generally provided by private institutions such as commercial banks and loan companies. As discussed in section 4.1. the government can support private loan schemes by providing funding or acting as a guarantor. For an example see Albrecht and Ziderman (1991, 7) for USA.

Collateral or Cosigner Requirements: Since these loans are generally provided by private institutions, they demand a collateral or a cosigner for the lending contract in order to reduce high default risk   in case of a default. Obviously, a collateral or a cosigner requirement creates significant disadvantages for borrowers, especially for those from low income families.

 Risks and uncertainties: In establishing the credit systems, minimizing the risks and uncertainties with regards to both borrower and lender is the primary goal of these systems. In fact, minimizing the risks for the borrower means minimizing the risks for the lender as well, regarding the credit repayment.

For the Lender: There is less risk for the lender in mortgage type systems within the student loan systems, since a co-signer or a collateral is demanded by the lender for a credit in these systems. This, in turn, allows the lender to meet the liquidity needs in a short time by converting the collateral into cash in case the student is unable to afford repayments. In case of absence of the collateral in opening the credit, the co-signer is expected to cover the expense determined in the contract. Therefore, in case the student cannot repay the credit, the risks and uncertainties the lender faces are lower in this credit type (As discussed in 4.2.b., income-contingent credit type, which is another student credit type, the student is expected to pledge

his/her future incomes as collateral and the absence of collateral or co-signer increases the risk for the lender in case the borrower goes default).

Student loans include many uncertainties for the borrower;

- Will the student be able to graduate completing the fulfillments of her/his branch?

- Will the student be able to find a job after graduation within the specified period to repay the loan?

- Will the graduate be able to earn sufficient income to repay the loan?

For the Lender: Benefiting from the credit, the borrowing student anticipates earning a higher income in the future. Investing in her/his education today, the student will qualify her/his labor, and will sell it in a higher price. Thus, she/he anticipates earning a higher income through her/his life compared to the condition that she/he doesn't invest in the education. However, this includes many risks and uncertainties as well;

- The branch that she/he planned to graduate might have become less important in the work market by the time she/he graduates. In other words, the labor demand of the employers might have been decreased with regards to that vocation. This, in turn, may cause the graduate to find a job with more difficulty and to be able to earn much less than she/he anticipated.

- While choosing the branch to professionalize, the student doesn't have necessary information about the incomes after the graduation due to the absence of a satisfactory communication with the graduates of that branch.

Accordingly, the wages regarding her/his vocation may be low, or the graduate cannot earn the income she/he anticipated.

- If the labor supply regarding the vocation selected is high, finding a job and earning the anticipated income for the graduate can take a longer time. If the labor supply is much more than the demand of the employers, lower payments are possible. Thus, the student may earn less than she/he anticipates.

- If most of the graduates invested in their education in order to have more income, there is a high level competition in the labor market. The student has less or no information about the labor investments of her/his rivals. If the skilled labor is much higher among the graduate jobseekers, finding a job may take a longer time. And again, if there are too many nominees with the demanded qualifications applying for the job, the wages will be lower than anticipated.

While borrowing for education, the student faces with these alternatives instead of investing in the education: to find a job as a high school graduate, to start a business, to go to the university finding a credit or without finding a credit. When we evaluate results of the other two choices apart from going to the university, the results are as follows;

- Instead of getting indebted with a student loan, to start a business with a credit: when we examine results for the newly started businesses in Turkey, it is observed that the risks for the newly started businesses are higher. According to a research conducted by the World Bank, 80 % of the businesses are liquidated in the fifth year and 96 % of them even could not reach the tenth year in Turkey (Fırat 2007).

- Instead of investing in the university education, participating in the labor market as a high school graduate: according to the research results on transition of the young to the labor market conducted by TURKSTAT (Turkish Statistical Institute) in the 2nd quarter of the year 2016, unemployment rate of the population between 15-34 ages was 13.2 %; the rate was 13.3 % among the college levels and graduates; and it was reported to be 15.5 % for the high school graduates in general. According to the results reported; the employment rate among the college levels and graduates is 73.7 %, while it is 43.6 % for the high school graduates in general (TURKSTAT 2016). According to the Income Structure Research conducted by the TURKSTAT (2015) it is observed that the wages of both female and male wageworkers increase generally in direct proportion to their educational status. According to the educational status, the highest annual gross income belongs to the ones with college and higher levels of graduation. The incomes in this level of education are reported to be 55.633 TL for the males, 45.483 TL for the females, and 51.405 TL in total. It is reported that the annual gross income for the high school graduates is 21.222 TL. Abovementioned research studies and statistics prove that the college and above level graduates can find a job in a shorter period of time and obtain higher incomes.

Despite the mentioned uncertainties regarding the future of the graduate, it seems to be the most effective choice for the students to invest in their education. Moreover, the student loans for their education are more repayable credits with less risk, compared to the other credit types.

Mortgage-type loans are more risky and have more uncertainties for the borrower compared to income-contingent loans. Pledging her/his future incomes as collateral

in income-contingent loans, the student will repay a certain percentage of her/his income. This, in turn, will create fewer uncertainties compared to mortgage loans, which are generally repaid in fixed installments. The logic behind this is that the student could not predict the time period that she/he will be able to find a job, and the wage she/he will earn.

4.2.b. Income-Contingent Loan Schemes

Income-contingent loan (ICL) schemes are repaid on a pre-arranged installment plan depending on graduates' annual income. Under the ICL, there is a certain threshold for repayments and graduate begins making repayments when his/her income reaches over the threshold. Furthermore, the payment installments are calculated in proportion to the graduate's income and the installments are paid to public or private institutions.

The income-contingent loan scheme was firstly implemented in Australia in 1989. In recent years, the UK, New Zealand, Sweden, Scotland, South Africa and Australia have been the countries where ICLS has been carried out (Johnstone 2005, 9).

The specific features of these schemes are:

Variable Repayments: There is variable repayment in the ICL, while mortgage-type loans have a fixed repayment system. The ICL is based on the annual income of graduates. There is a certain threshold for payment installments and if graduates' annual income is above this threshold, he/she makes repayments in a certain percentage of her/his income. On the other hand, if graduates' annual income is below this threshold, he/she does not make repayments (until his/her income rises above this threshold). Moreover, borrowers generally start repayments after finding a

job that provides an income above the specified threshold. This generates an important advantage for students. Firstly, if graduate has found a job but his/her annual income is below this threshold, he/she does not start repayments. Secondly, if graduate entered a labour-market providing a poor income at the beginning, in other words if the graduate's income is low but over the threshold, he/she will make less repayments compared to those of the mortgage-type loans, which reduces the risk of graduate's going into default. Supporters of the ICL have stated that students, especially those in the low-income groups, will access the loans easily and thanks to convenience of repayment participation to post-secondary education will increase.

Repayment period: Within the scope of ICL, repayment periods vary depending on the incomes of graduates. Namely, there is not a specified repayment period in ICL, while there is a fixed period varying from 10 to 20 years in mortgage loans. Ultimately, high-income graduates make repayments at higher amounts and pay off the total debt in a shorter period, whereas low-income graduates make repayments at lower amounts and in longer periods.

Interest Rates: While mortgage-type loans have generally fixed interest rates which are generally based on nominal interest rates, interest rates in ICL are usually based on CPI. Since CPI is usually lower than nominal interest rates, the total cost of the debt in ICL is less than mortgage-type loans for students.

Lenders: In this system, loans are usually provided by the government. Furthermore, countries implementing ICL collect repayments through tax system or social security system. The repayment mechanism in the tax system, which is implemented by Australia, works as follows:

Total debt amounts are recorded via tax file number. The tax file number, which is also used in pension procedures, is unique and special for each student. The recorded information is reported to the unit of higher education of the Ministry of Finance. When graduates start to work, the employer begin to have access to their debt information and make monthly payments to the relevant tax department calculated as a percentage of the annual income. It is also mentioned that repayments are made in two ways as withholding tax and income tax repayments. The tax department sends the relevant repayments to the unit of higher education of the Ministry of Finance. When the debt is totally repaid, the Ministry of Finance gives the information to the employer that the total debt is over (Özekicioğlu 2013, 59).

Repayments via these mechanisms make it difficult for students to avoid repayments, thus, reduce the risk of loss for the government stemming from refusal of payment. Armstrong and Chapman (2011, 5) emphasized on the importance of income-contingent loan system's implementation:

Of course, the overarching issue with income-contingent loan schemes relates to implementation. Regional and global experiences suggest that this issue has been the key cause of failure in many income-contingent loan schemes. These lessons must, for example, be carefully applied to the unique institutional and historical environment that categorizes each East Asian economy. In particular, they must be designed in reference to the administrative capacity of the relevant country.

Collateral and Cosigner Requirements: In this scheme, students borrow the loan only after pledging their future incomes as collateral. On the other hand, collateral, which is based on a fixed asset, is not required in ICL. Additionally, since borrowing is based on the students' future income, the economic background of the students' family is not considered as a negative situation in order to benefit from the loans. Furthermore, students from low-income families have lower risk appetite; these students are protected against excessive risk (Özekicioğlu 2013, 60). In addition, this facilitates access to credit for low-income students. The essential feature of the ideal credit systems is accessibility; this is taken into account, credit used by low-income students is the most significant advantage of this scheme.

Risks and uncertainties:

For the borrower: The risks and uncertainties are lower in this system for the borrower compared to mortgage-type loan system, since the repayment installments are determined in proportion to the income of the graduate. While a fixed repayment is demanded from the graduate independent of her/his income in the mortgage-type systems, the risk of failure to make repayments or uncertainties based on this are decreased in ICL, since there is a threshold for the repayments, and the repayments increase as the income of the individual increases.

For the lender: the risk for the lender can be handled in two ways in this system. Firstly, the student pledges her/his future income while borrowing through the ICL. In this system, in case the student goes default, the lender doesn't have a fixed asset to convert instantly into cash in order to cover the losses. Secondly, since a convenience provided for the students in repayments in this system, the risk for the lender based on the graduate's being unable to make the repayments is low.

4.2.c. Hybrid (Fixed Schedule-Income Contingent) Loans

Hybrid schemes are arrangements in which mortgage-type loans and income-contingent credits are implemented together. These schemes are not implemented in common.

Fixed and Variable Repayments: Hybrid schemes usually consist of fixed repayment schemes, but changes in repayment period may occur depending on increments in the income. Graduates can make fixed repayments, while those who do not earn an income for a period of time or low-income graduates make their repayments to an income-contingent basis (Özekicioğlu 2013, 62) The graduates begin to pay fixed installments after finding a job or a wage increase. In this system, the schedule offers a chance to make repayments on an income-contingent basis for graduates with low-income, as it also offers a chance for those with sufficient income to repay the total debt in fixed installments and in shorter periods. Additionally, these schedules provide exemption from repayment of the debt for the graduates in certain conditions. The advantage of such a scheme is that it does not require income verification but makes fixed repayments, which is an administratively simpler method (Johnstone 2005, 11).

Repayment Period: There is not a specifed period for repayment of the total debt. Repayment periods generally change since income-contingent scheme is also implemented concurrently.

Interest Rates: The determination of interest rates varies in different countries.

Lenders: Loans are provided both by private institutions and the government; however, it is observed that loans are generally provided by the government in

practice. It is because the government guarantee is generally demanded even if the loan is provided by private institutions.

Collateral and Cosigner Requirements: A collateral or a cosigner is not generally required in this type of loans.

Risk and uncertainities:

For the borrower: Risk and uncertainties are minimum in income-contingent loan schemes with regards to repayment convenience. In hybrid schemes, risk and uncertainties change according to the implementation. For example, if the income-contingent and fixed repayments are seasonal as applied in Iceland (further explanation in 4.3.c.), although the borrower has less risks and uncertainties compared to mortgage-type systems regarding the repayment, the risks and uncertainties are much more compared to income-contingent systems. If she/he is a low-income individual, then she/he makes low repayments during income-contingent periods. Since it's known that fixed repayments will be made in certain periods (fixed installments are assumed to be higher than the income-contingent installments), she/he can allocate some money during income-contingent repayment periods in order for not having difficulty in making repayments during fixed installments period. This, doubtlessly, creates less risk compared to mortgage-type systems, where the graduates only make fixed installments. However, this system includes much more risks and uncertainties for the borrower compared to income-contingent loan systems.

On the other hand, in a system like IBR in the US, which determines the income-contingent and fixed repayments depending on the income threshold of the individual, there is less risk of absence in the repayment. Since the repayments are

grounded on income, this system provides convenience in repayment and decreases the risk of default in the absence of repayment.

For the lender: Since there is not a collateral or a cosigner requirement in the system, the risk and uncertainties of the borrower in case of a default are much more compared to income-contingent loan systems. However, the default risk of the lender stemming from the absence of payment by the borrower is less compared to mortgage-type loans, since there are fixed installments and more repayment convenience is provided for the borrower (compared to mortgage-type systems) in certain times (Iceland example) or for certain income levels (IBR example of the US).

4.3. Case Studies

4.3.a. USA

The structure of financing higher education in the US is based on the knowledge about the costs and living expenses of students. Majority of the students in the US borrow to finance these costs. Borrowing instutions are mostly composed of commercial banks. These banks finance the students with fixed interest rates depending on market interest rates to be repaid in a certain period of time after graduation. Borrowing schemes are based on mortgage type loan programs which repayments are collected with fixed installments (further explanation in 4.3.a.iii.). This system puts the graduates without high income into a heavy debt burden and it can be deterrent at the beginning for students who do not anticipate earning sufficiently in the future. For this reason, students with lower economic backgrounds, usually don't want to borrow (Özekicioğlu 2013, 73). Meanwhile, substitution of mortgage type loans with income-contingent loans can abolish the inequality in the

access process since income-contingent loan programs facilitate repayments. Thus, low income students can easily benefit from the loans, as well. Furthermore, income contingent loans reduce the burden of installments, therefore decrease the risk of a default compared to mortgage-type loans.

Students in colleges or universities can benefit from federal supports, commonwealth supports, institutional grants or student loans for financing higher education. Student loans are basically consisted of two parts as private student loans and federal loans (U.S. Department of Education [ED], n.d.).

4.3.a.i. Private Student Loan Schemes

Seeking new financial resources for funding higher education in the United States was motivated by increasing population growth, rising demand for higher education, and escalating educational costs. For this reason, additional financial sources for students were searched for and privatization was introduced in the 1990s in financing higher education.

There are two types of private student loans in the USA: school-channel and direct-to-consumer private loans. In school-channel loans, the funded borrowing amount is directly transferred to the schools and loans are 'certified'. In other words, school certifies that borrowing amount will be used only for educational expenses and agrees to hold them. On the other hand, in direct-to-consumer loans, borrowing amount is transferred directly to students. When compared to school-channel loans, direct-to-consumer loans allow simpler access to funds but with higher interest rates ("Comparison of Federal," 2014). Furthermore, direct-to-consumer private loans are preferred more often in the US.

Private loans are provided to students as mortgage-type loans, therefore the basic features of private loans are further explained in section 4.3.a.iii.

4.3.a.ii. Public Loan Schemes

The Government-backed student loans in the US were first proposed in 1958 and extended broadly in 1960 (The Higher Education Act of 1965 [HEA], 1965). Today, public loan schemes in the United States are provided as Federal Direct Student Loans. These are mainly funded by the US Government.

There are three types of Federal loans: Stafford Loans, Perkins Loans, and PLUS (Parent Loan for Undergraduate Students). These loans have lower borrowing limits than private loans. On the other hand, PLUS has higher borrowing limit than Stafford and Perkins Loans (Federal Student Aid [FSA] n.d.). Additionally, the amount of the loan is transferred directly to the students in Stafford and Perkins loans, while it is transferred to parents in PLUS (FSA n.d.). There is no requirement for the credit history of student in Stafford and Perkins loans, while it is a necessity in PLUS loans. The fact that many students have no credit history indicates that this facilitates access to credits by students. Thus, access to Stafford and Perkins loans is easier than PLUS. Students are responsible for the total debt in Stafford and Perkins loans, while parents are responsible in the PLUS. For that matter, parents make the repayments in PLUS because they have the signitures on the borrowing contract (FSA n.d.).

Some features of federal loans are as follows:

First, when students enter the repayment process, a standard repayment plan is determined. These are generally fixed monthly repayments that borrower has to repay within 10 years ("How Standard Repayment Works," 2010).

Second, interest rates are fixed, which are determined by the Congress, and are lower than private loans.

Third, FDLP is funded by public capital originating from the United States Treasury (International Business Publications [IBP] 2013, 145). These loans are either subsidized by the US Government (Direct Subsidized) or unsubsidized (Direct Unsubsidized). Both of them are guaranteed by the US Department of Education either directly or through a guarantee office (FSA n.d.). The interest payments of the subsidized federal loans are made by the government which means that the government pays the interest of the debt while the student is focused on her/his education (Money Magazine 2008). The students repay only the amount wihtout the interest. For example, if the students' total debt is $7,500, student only pays $7,500 whereas students pay $7,500 plus interest in the unsubsidized loans.

Fourth, a cosigner or a collateral is not demanded in federal loans.

Fifth, there is less risk of absence in the repayment of the borrower in this system. As mentioned before, in case the borrower is unable to make fixed monthly repayments, she/he has the possibility to make the repayment on an income-contingent basis. Moreover, the loan repayment relief is more flexible in this system.

Additionally, since the loans are provided by the public capital, a collateral or a cosigner is not generally demanded. This, in turn, means that the risks and uncertainties of absence in the repayments are much more for the lender compared to private loans. On the other hand, there is not a complete debt cancellation in federal loans. However, there is an opportunity for the borrower to make income-contingent repayments or a loan repayment relief. Since this opportunity decreases the risk of a default of the borrower, the risk of a possible loss for the lender is low, as well.

4.3.a.iii. Types of Loans in the USA

✓ *Mortgage-Type Loans*

In the US, mortgage type loan schemes are implemented as private student funding (The income-based repayment schedule is not possible for private loans). In the context of mortgage-type loan schemes, graduates repay fixed annual installments including the interest. On the other hand, higher interest rates, penalties, and fees, and less flexible payment terms can be the motives behind why mortgage-type loans are less preferred. Despite the fact that these loans have high risk of a default and increased administrative costs, the implementation rate of these loans has escalated in the last 10 years in the US. The main reason is that access to public loans are more difficult and the borrowing amount is limited.

The specific features of mortgage-type loan schemes in the U.S. are as follows:

Fixed Repayments: There is only fixed repayment schedule without providing an additional income-based repayment.

Repayment Period: There is generally a specified period for repayments, and repayments are often begun within the next six months (sometimes within the next twelve months) after graduation.

Interest Rates: Interest rates are higher compared to the federal loans. Furthermore, interest rates are not fixed; thus, it can fluctuate drastically depending on financial markets. Additionally, interest rates vary according to the credit history of the students and the cosigners. Therefore, borrowers and cosigners with a clean credit history can benefit from lower interest rates. There is also an initial charge determined in parallel with the debt amount for the implementation of the loans.

Lender: Loans are funded by banks, other companies,organizations, or online lenders. In contrast to federal loans, there is no government guarantee.

Collateral and cosigner: A collateral or a cosigner are usually demanded. Moreover, lender takes into account the income and credit history of the cosigner and student, as well. If the cosigner has a high income and a clean credit history, applicant's chance is higher to benefit from the loans.

Risk and uncertainties:

For the borrowers: Since the interest rates of the private loans are higher, the cost that the student has to cover while repaying is also higher. Moreover, since the repayments are independent of income and made in fixed installments in a certain period of time, the risk and uncertainties that the students, particularly the ones who do not anticipate earning much in the future, have to bear is higher.

For the lenders: Since a collateral or a cosigner is demanded from the students in exchange for providing the credit in private loans, the risk that the lender is exposed in case of a default of the borrower is lower. On the other hand, since this type of credits involve more risks and uncertainties for the borrower regarding the repayments, the risk and uncertainties that the lender is exposed is less regarding the repayments of the loan.

✓ *Income-Based Repayment Loan Schemes*

Income-based repayment schedules in the US are only available for federal loans (for public loans). There are four types of income-driven repayment plans; income-based repayment (IBR), pay as you earn (PAYE), revised pay as you earn (REPAYE), income contingent repayment (ICR) (FSA 2016, 2). If the debt is high

and the graduate has insufficient or no income, she/he may benefit from one of the the repayment plans mentioned above.

Variable Repayments: Borrowers repay a certain percentage of discretionary income instead of fixed repayments specified in the standard repayment plan. Repayment amounts are up to 10%, 15% or 20% of discretionary income and vary according to the program selected. Different from the other programs, the repayment amount at REPAYE program may be higher than the 10-year standard repayment amount.

Repayment Period: There is no fixed repayment period for the payment of full debt because repayments are based on discretionary incomes of the borrowers. Since monthly repayments of the borrowers are in lower amounts, the repayment of the total debt takes a longer period of time.

Interest Rates: Since repayment periods are longer, borrower pays more for the interest compared to the other federal loan programs. On the other hand, interest rates are lower than private loans because these loans are provided by the government.

Lender: Loans are provided by the US Government.

Collateral and cosigner: A cosigner or a collateral is not demanded. Instead, borrowers are to give information about their family sizes and incomes in order to benefit from the loans.

Risk and uncertainties:

For the borrower: For the borrower, these implementations are the ones with the least risks and uncertainties among all of the loan systems, regarding absence in the repayments. Since the borrower makes the repayments in proportion to her/his

income, this system has less risk stemming from absence in the repayment compared to fixed-monthly-installment systems.

For the lender: Since the risk is lower regarding the absence in the repayment of the borrower, the risk of a default for the lender is lower as well. On the other hand, since a collateral or a cosigner is not demanded, this system involves much more risk and uncertainties compared to private loans.

✓ *Hybrid (Fixed Schedule-Income Contingent) Loans: Income Based Repayment (IBR)*

Hybrid (Fixed Schedule-Income Contingent) Loans within the IBR were firstly implemented in 2009 (Johnstone and Marcucci 2010, 155). This loan scheme is essentially based on the government guarantee for the students and it includes fixed and variable repayment schedule. The most essential feature of IBR is that it is also possible to make repayments on an income-contingent basis for students with low incomes.

Fixed and Variable Repayments: Borrowers make fixed repayments if the borrowers income exceeds the specified income threshold. Namely, there is certain threshold to benefit from income-contingent loan schemes determined by the income and family size of the graduates. If graduate's income is over this threshold, the borrower cannot benefit from income-contingent repayments, instead, she/he can make fixed repayments determined by 10-year Standard Repayment Plan. Moreover, even if the graduate earns too much income over this threshold, they continue to make fixed repayments. Therefore, IBR offers a great advantage for low-income earners and encourages the students, especially those coming from lower economic backgrounds, to apply for the loans to finance their education.

Besides, the installments to be repaid by the graduate must be recalculated and reapproved depending on graduates' updated income and family size information each year even if graduate did not make income-based repayments.

Repayment period: Repayment periods are variable according to total debt but generally it takes 10 years or more. Under the IBR Plan, students who borrowed after 2014, make repayments within 20 years while those borrowed before 2014 make repayments within 25 years. On the other hand, if graduates make income-based repayments with lower installments it means that they repay the total debt within a longer period of time. Moreover, a relief is also possible for the remaining debts after 25 years within this plan (Johnstone and Marcucci 2010, 155).

Interest rates: Interest rates are close to the interest rates of Federal Direct Student Loans and lower than that of private loans. However, graduates who make income-based repayment in a long period of time, repaying the total debt in a longer period, accordingly, they have to put up with higher interest rates. Additionally, the government can also provide interest subsidy to students. The government can pay a certain percantage of monthly interest amounts for subsidized loans, while borrowers pay the monthly interest amount for unsubsidized loans.

Lender: IBR is funded by the US Government.

Collateral and cosigner: A cosigner or a collateral is not demanded.

Risk and Uncertainties:

For the borrower: This is the system with the least risk and uncertainties regarding the repayments of loans for students among all student loan programs. This

system diminishes the risk of a default for the student, since it provides income-contingent repayment for the graduates with lower incomes.

For the borrower: This is the system with the least risk and uncertainties regarding the repayments of loans for students among all student loan programs. This system diminishes the risk of a default for the student, since it provides income-contingent repayment for the graduates with lower incomes.

As an example , a single graduate single a total debt of $40,000 on income-based repayment basis will pay a total of $45,000 including the capitalized interest as the first repayment is initiated. In this case, the monthly repayment amount is calculated as $552, based on a total debt of $45,000 at an interest rate of 8.25% (FSA 2016, 7). If IBR Plan payment amount of the graduates is less than $552, payments can be made according to the Income Based Repayment Plan (FSA 2016, 7).

4.3.b. Australia

Student loan system in Australia basically depends on the income-contingent loan system. Higher Education Contribution Scheme (HECS), an income-contingent loan system, was firstly implemented in Australia in 1989. This scheme was later introduced in New Zealand in 1991, Chile in 1994, South Africa in 1996, United Kingdom in 2005, and Thailand in 2006 (Chapman and Ryan 2005, 491). Moreover, there is a significant tendency in some countries to design income-contingent loan schemes such as Germany and Canada. Although some countries also carried out such an income based scheme, Australia has remained the most successful country to implement this scheme. It should also be mentioned that public administration was the main reason why this scheme was firstly implemented in Australia and had successful outcomes. "The reasons for this are that the public administration systems

of these countries feature a strong legal framework, a universal and transparent regime of income taxation and/or social security collection, and an efficient repayment mechanism" (Armstrong and Chapman 2011, 89). Armstrong and Chapman (2011, 89) have also presented that there must be a strong legal framework for the collection of credits.

4.3.b.i. Public Student Loans

Student loans in the Australia are mainly funded by Australian Government and also administrated by the Department of Education and Training. In other words, students can borrow from the government through Higher Education Loan Program (HELP) to finance their education. There is no role of private sector in this system and it is fully controlled by the government.

The repayment system is also under government control. The government collects the loans through Australian Taxation Office via automatic deduction.

In the context of HECS system, Australia has lower administrative costs. Less than three percent of $A800 million collected from repayments each year is used for administrative costs. According to Chapman and Greenaway (2003, 12), the reason is that student debts and collections are traceable, and the mechanisms of Australian Taxation Office are well-functioning.

Commonwealth Supported Places: The key issue within this scheme is the Commonwealth Supported Places. According to Information for Commonwealth Supported Students published by Australian Government, Commonwealth Supported Places cover all of public universities and some private providers (HECS-HELP 2016, 1).

Students who want to make use of the scheme should also be eligible for Commonwealth Supported Places and this is only available for domestic students. Students who will benefit from this scheme within the Commonwealth Supported Place, must be an Australian citizen or a New Zealand citizen/a permanet visa holder and reside in Australia for the duration of students unit (HECS-HELP 2016, 1). Others can not benefit from this scheme and they bear the learning costs and living expenses by themselves (Özekicioğlu 2013, 77). In short, the government only finances the Commonwealth Supported Students within the scope of HECS-HELP scheme, which means that students who don't enroll as Commonwealth Supported Places should enroll as fee paying students.

Students who wish to benefit from the scheme must make their application within a certain period of the year. Eligible applicants for this scheme will receive 20% discount for $A500 or more up-front payments (HECS-HELP 2016, 2). According to Information for Commonwealth Supported Students published by Australian Government (2012, 19):

> After then, Australian government funds Commonwealth supported places by paying grants to approved providers. In addition to this Government contribution, Commonwealth supported students pay a student contribution amount for each unit of study they undertake.

Students' contribution amounts required for payment is shown in the following table:

Student Contribution Band		Student Contribution Range (per EFTSL)
Band 3	*Law, dentistry, medicine, veterinary science, accounting, administration, economics, commerce*	$0 – $9,425
Band 2	*Computing, built environment, other health, Allied health, engineering, surveying, agriculture*	$0 – $8,050
Band 1	*Humanities, behavioral science, social studies, education, clinical psychology, foreign languages, visual and performing arts, nursing*	$0 – $5,648
National Priorities Band	*Mathematics, statistics, science*	$0 – $4,520

Table 4.3. Students Contribution Amounts (HECS-HELP 2016, 11)

Students contributions are determined according to anticipated future income of the students. Furthermore, HECS-HELP helps eligible students, who enrolled in the Commonwealth Supported Places, pay their student contribution amounts (HECS-HELP 2016, 13).

4.3.b.ii. Private Student Loans

We could not access any source manifesting the existence of a private student loan program in Australia. All current student programs are managed and also funded by the Australian Government.

4.3.b.iii. Types of Loans in the Australia

✓ *Mortgage-Type Loans*

Student loan types in Australia are only based on income-contingent schemes. There is no source available for the implementation of mortgage-type student loans.

✓ *Income Contingent Loan Schemes*

As Chapman and Greenaway (2003, 12) mentioned in their study, the scheme had the following characteristics in 1989:

- a charge of $A1800 (in 1989 terms) pro-rated by course load, but with no variation by discipline;

- on enrolment students could choose to incur the debt, to be repaid through the tax system depending on personal income, or;

- students could avoid the debt by paying up-front, which was associated with a discount of 15 percent (later increased to 25 percent);

- those students choosing to pay later faced no repayment obligation unless their personal taxable income exceeded the average income of Australians working for pay (about $A30,000 per annum, in 1989 terms);

- at the first income threshold of repayment, a former student's obligation was 2 percent of income, with repayments increasing in percentage terms above the threshold; and

- HECS could be paid up-front with a discount, but there was no additional interest rate, although the debt and the repayment thresholds were (and remain) indexed to the CPI.

But, some of the features were changed over time. For instance, tuition fees were differentiated by discipline and the minimum income threshold was changed (Özekicioğlu 2013, 74).

Some current features of HELP are as follows:

<u>Variable Repayments:</u> Graduates' repayments depend on their annual income instead of fixed repayment schedule. The repayment rates for the 2011-2012 periods are presented in the following table:

Repayment income in the range	Repayment rate (% of repayment income)
Below $47,196	*Nil*
$47,196–$52,572	4.0%
$52,573–$57,947	4.5%
$57,948–$60,993	5.0%
$60,994–$65,563	5.5%
$65,564–$71,006	6.0%
$71,007–$74,743	6.5%
$74,744–$82,253	7.0%
$82,254–$87,649	7.5%
$87,650 and above	8.0%

Table 4.4. 2011-2012 Repayment Rates (HECS-HELP 2016, 27)

Firstly, it is stated that repayment income is calculated as:

(Taxable income for an income year)+(total net investment losses)+(any total reportable fringe benefit amounts showed on graduates' payment summary)+(reportable super contributions)+(any exempt foreign employment income from the current income year) (H&R Block 2017).

According to the table 4.4., minimum threshold in order to start repayments is $47,196 for 2011-2012 financial year. If graduates' income is below this threshold, he/she will not pay any repayment and the debt is postponed for the relevant year. But if graduates' income is above this threshold, for instance between $47,196 and $52,572, he/she must begin to his/her repayments. For this range, he/she will repay 4.0% of his/her annual income, this range from $1,887 to $2,102. It can be clearly seen from the table; as graduates' annual income increases, repayment amounts are

also increase according to his/her annual rate of income. Moreover, compulsory repayment will proceed until his/her amount of total debt is completely paid back.

2017-2018 repayment schedule is revised as shown on the following table:

2017-2018 Repayment Threshold	Repayment % Rate
Below $55,874	*Nil*
$55,874-$62,238	4.0%
$62,239-$68,602	4.5%
$68,603-$72,207	5.0%
$72,208-$77,618	5.5%
$77,619-$84,062	6.0%
$84,063-$88,486	6.5%
$88,487-$97,377	7.0%
$97,378-$103,765	7.5%
$103,766 and above	8.0%

Table 4.5. 2017-2018 Repayment Rates (Australian Government StudyAssist n.d.)

When compared table 4.4. with table 4.5., we can explicitly observe that minimum income threshold for repayments is raised, which is $47,196 on the Table 4.4. (in 2011-2012 financial year) whilst it is $55,874 on Table 4.5. (in 2017-2018 financial year). Accordingly, graduates who have an annual income of $55,874 will start compulsory repayments and beginning to pay 2,235$ in 2017-2018 financial year. Besides, maximum income threshold is also raised from $87,650 to $103,766, which means that the owner of this amount and over will repay 8 percent of her/his annual income. We can observe from the two tables that in spite of the increment in repayment intervals, repayment rate is fixed for years.

In addition to abovementioned information, graduates' income is only grounded on for compulsory repayments, instead of his/her parents' income etc. Furthermore, compulsory repayments start when graduates' income is above the threshold even if he/she continues to study (HECS-HELP 2016, 27). Graduates can also make voluntary repayments in addition to his/her compulsory repayments. But voluntary

repayments don't reduce the compulsory repayment, only reduce the total debt. However; repayment interval and repayment rates are revised every year and compulsory repayment threshold are adjusted accordingly.

It should also be noted that compulsory repayments are made to Australian Taxation Office (ATO) and are collected through income tax system. ATO calculates graduates' compulsory repayments for the year and adds it to graduates' income tax notice (ATO 2017).

About the functioning of the system, in order for the graduate to make repayments, graduates firslty must inform the employer that he/she have HECS/HELP debt which is done through tax declaration form before starting work (H&R Block 2017). Hence, the country has an effective taxation system, which is the main reason that system functions are performing effectively (Özekicioğlu 2013, 84).

Repayment Period: There is not a specified repayment period. Since repayment changes according to income level, repayment periods also change.

Interest Rates: There is no interest; instead, total debt is calculated by adding CPI on 1 June each year.

Lender: Loans for higher education are funded by Australian Government. In addition, the Department of Education is responsible for administering this funding.

Collateral and cosigner: Students borrow from the government by pledging their future income as collateral.

Risk and Uncertainties:

For the borrower: Income-contingent repayment systems decrease the risks and uncertainties that a graduate face compared to fixed repayment services. Including completely income-contingent repayments, HELP means a quite low level of risk and uncertainties that the low-income graduates bear in the repayment. Providing the opportunity to make high repayments for the high-income graduates and low or no repayments for the low-income graduates, this system creates equal opportunity in repayments of the graduates.

For the lender: Although it seems that the future income of a student being pledged as a collateral is a high risk for the lender, the default rate of students resulted from absence in the repayments in income-contingent systems are higher compared to that of fixed installment systems. Accordingly, the lenders of the fixed installment system suffer a loss. The motive behind this is that convenience is provided for the graduates in repayments and that the lenders suffer fewer losses since the loans are generally paid back in income-based systems, as in the HELP. Therefore the risks and uncertainties that the lender faces are lower.

Eventually, advantages of the ICLS are encouraging students, let alone deterring the tendency to participate in higher education. Encouraging role of HECS can be observed from the participation rates in higher education in Australia. Along with implementation of such a scheme, the government has significantly increased the total number of students in the country since 1989. Higher education student figure was approximetly 400.000 in 1989, while it reached around 500.000 in 2000s (Armstrong and Chapman 2011, 91). Armstrong and Chapman (2011, 94) reported in their research that with introduction of HECS, the number of enrolled students in

the universities increased. In this sense, the number of students enrolled in higher education in Australia increased by 50% from 1989 to 2006 (Özekicioğlu 2013, 76). Chapman and Greenaway stated that the reason of the increment was that there was no deterrent effect of the system and the government had increased its expenditures for higher education with the expectation of an increment in the government's future revenue, because HECS provided $A6 billion revenue over the 13 years since its introduction (Chapman and Greenaway 2003, 13).

✓ *Hybrid (Fixed Schedule-Income Contingent) Loans:*

Existing student loan programs are based solely on the graduates' income. The source for a system that also includes fixed repayments could not be accessed.

4.3.c. Iceland

Student loan scheme which is referred as the Icelandic Student Loan Fund have been carried out for several decades. The fund provides assistance either for the period of study, or in general, for two semesters of equal length for full time studies ("Iceland- Financial support," 2009).

In Iceland, public and private universities are mostly funded by the government (OECD 2016). However, higher education institutions, both private and public, can charge different fees. The loans are given at low interest rates to cover the living costs and tuition fees (OECD 2016).

4.3.c.i. Private Loans

Icelandic Student Loan Fund is mainly regarded as public student loan scheme. Iceland does not have any private student loan system.

4.3.c.ii. Public Loans

Icelandic Student Loan Fund is a public loan scheme which is run and funded by the government. The Fund only provides loans to Icelandic citizens.

4.3.c.iii. Types of Loans in Iceland

✓ *Mortgage-type Loans*

Only the repayment terms are similar to mortgage-type loans. For this reason, only the repayment terms will explained in this section .

Fixed and Variable Repayments: Repayments are made as fixed and variable payments. Payments in the first half of the year are similar to mortgage-type loans with fixed repayments. These repayments are made regardless of the income of the graduates.

✓ *Income-Contingent Loan Schemes*

The repayment terms in the second half of the year and interest rate which is indexed to CPI are basic features of the income-contingent loan schemes. Therefore, only repayment terms and interest rates will be discussed in this section.

Fixed and Variable Repayments: Supplementary payments are made in the second half of the year and they are based on incomes of the graduates in the previous year. Income-based repayments are made according to certain percentage of previous year's tax base for municipal income tax purpose. Besides, fixed payments are deducted from the supplementary payments.

Interest Rates: Interest rates are determined by the CPI of the Central Bank of Iceland.

✓ *Hybrid (Fixed Schedule-Income Contingent) Loans:*

Icelandic Student Loan Fund is the only scheme among countries that bear all of the main characteristics of hybrid schedule.

The specific features are as follows:

Application conditions: Students' academic achievements as well as other criteria are also taken into account for implementation of the loans. Individuals must be between 18 and 50 years of age, excluding the family members. For legal entities, approval of the government or the financial institution is required. In addition, those who are permanently resident in Iceland for five years before the application date can apply for loans. After all conditions are met and the application is approved, the loans are paid into a commercial or saving bank account.

Fixed and Variable Repayments: Installments are made in two forms as annual fixed repayment and certain percentage of graduates' income, which is determined by the previous years' municipal tax base and graduates' investment revenues. Fixed annual sum was €831 in 2006 and the average annual repayment amount was 3.75% of the graduates' previous-year-income ("Iceland- Financial support," 2009). This system differs from others in that repayments vary over time, instead of varying according to the income of the graduates. In this regard, graduates make fixed repayments in the first half of the year and make income-contingent repayments in September, which are calculated over a certain percentage of previous year's annual income. Moreover, the fixed payment shall be deducted from the supplementary payment. If graduates' income is below a certain threshold, income-contingent repayment is not calculated.

Repayment Period: Borrowers begin to make repayments after two years from graduation, furthermore, it is also possible to defer installments temporarily.

Interest Rates: Interest rates are set at 1.2% by the Fund for 2017-2018 school years; it can be variable but it is never higher than 3% per year. Besides, interest rates are based on Consumer Price Index of the Central Bank of Iceland.

Lender: The fund is public study loan programme and based on the government subsidies and bank loans.

Collateral or cosigner requirement: There is cosigner requirement. Students issue a bond in students' own name as a guarantee to the loan apart from the students, an individual or a legal entity is required as a guarantor of the repayments.

Risk and Uncertainties:

For the borrower: Including both the fixed payments and the income-contingent payments, the program decreases the risk and uncertainties for the borrower stemming from absence in the repayments, compared to the programs with fixed payments.

For the lender: The risk and uncertainties being lower for the borrower in the repayments decreases the risk for the lender in absence in collection of the repayments, as well. On the other hand, an individual or a legal entity shown as a collateral in the system means that the lender can withdraw the loan from these individuals in case of a default of the borrower. This, in turn, minimizes the risk for the lender stemming from absence in the collection of the repayments.

CHAPTER V

POLICY SUGGESTION FOR FINANCING THE HIGHER

EDUCATION

5.1. Private System

5.1.a. Income-Contingent Credit Type Provided by Private Banks

The main objective of this study is to meet the financing needs of students, who have sufficient scores from the university exams to apply for foundation universities, via a special credit system to be designed. Because it is observed that the budget allocated for the higher education students by the public sector is insufficient to cover the expenses in these universities. Therefore, this study focuses on the finance that will be provided by the private banks for the educational expenses of the students. However, it is a necessity to optimize the necessary conditions both for the banks to provide credits and for the students to demand these credits. In fact, the interest rates, repayment conditions, and/or repayment periods determined by the banks might be a disincentive for the students in using these loans. Such kinds of problems complicating the functioning of the system for both the students and the banks are further detailed in the following parts.

5.1.a.i. Possible Problems in the Credit System

For Lenders: Providing loans for the students in higher education might be a factor incorporating high risks for the private banks. Behind this lay many reasons such that the students do not have a regular income while using these credits, or that there is the possibility for the students to fail to meet the collateral or the co-signer

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condition demanded by the banks (in other words, if the students had sufficient collateral they would convert it into cash and finance their education without the loan), or that there is a high risk (compared to other borrowers) for the students to be unable to repay the credit due to the uncertainty of the future income, and that there are similar uncertainties in the employment processes of the students after graduation. Due to such kinds of factors, the banks are reluctant to provide loans for the students. Despite these risks and uncertainties, even if the banks consented to provide loans for the students, they would agree to provide credit only if a higher interest rate that would compensate the risks was determined. Moreover, they would demand the students to repay the loans in a shorter period with higher installments. However, these are observed to be disincentives for the students to finance their higher education via loans.

For the Students in Higher Education: The most important reason for the students to remain undecided or to refuse using credits in financing their higher education expenses via bank loans in such a system is the uncertainty that they anticipate about their future income. In such a system (where the credits are provided by the private banks with high interest rates, within short repayment periods, and with higher installments), the students might not demand the credits or the number of students that demand loans might be in low levels since they cannot foresee the cost-revenue analysis based on the abovementioned uncertainties. However, in order to encourage the students to finance their higher education expenses via private loans, the banks can provide conveniences in particularly repayment systems, thus, the banks can decrease the risks and uncertainties for the students.

✓ *In Order for the Students to Participate in the System: Income Based*

Repayment Schedule

In order to provide convenience to the students in repayments, the installments can be collected based on a percentage of their future incomes, rather than collecting fixed installments. Within this system, either an annual income level can be determined as the threshold, or without a threshold, an income-based progressive repayment system can be applied.

System 1.a.: Income Based Repayment Schedule with Repayment Threshold

The application of the income-contingent system on a threshold basis is as follows: the repayment installments would be in lower levels for the ones, who earn less then the threshold level, while it is expected that the more income they have the increased the installments would be.

Income Threshold	Repayment % Rate
Below X TL	**%A**
X TL– 1.5X TL	%1.1A
(1.5X+1) TL–2.25X TL	%1.2A
(2.25X+1) TL – 3.37X TL	%1.3A
(3.37X+1) TL and above	%1.4A

Table 5.1. Income Based Repayment Schedule with Repayment Threshold

The income threashold was determined as X Turkish Liras (TL) on the table 5.1. Accordingly, the students who earn less than X TL are expected to make repayments as A percent of their incomes. As their incomes increase, the percentage of the repayments increases as well. As per the students who earn a certain income level

(3.37X+1 TL) and above are expected to make repayments as 1.4A percent of their incomes.

In such a policy proposal, it's for certain that the most important issue is determining factors of this X TL threshold and its amount. In this framework, X value might be determined according to the Earnings Structure Survey of the TURKSTAT (2015). According to the results of the survey, the annual average gross earnings of the individuals, who are college or higher level graduates, can be determined. For example, according to the results of a survey conducted in 2014, the annual average gross earnings of college or higher level graduates were 55,633 TL for males, 45,483 TL for females, and 51,405 TL in total (TURKSTAT 2015). Considering that the graduates will earn less in the initial phases of their careers, the threshold should be determined in a lower level than the annual average gross earning amount. Thus, the graduates earning less have the chance to make most of the repayments. According to this, a new average value is created based on the average gross earnings of the new graduates (for example, 1,5 times the minimum wage per person) and this value is determined as the threshold level.

System 1.b. Income Based Repayment Schedule without Threshold

A problem that may occur in the System 1.a. is that all of the students below the X TL level may have to pay the same installments (as A% of their earnings). However, the repayments would be diversified for the graduates who earn various amounts below the threshold level (Table 5.2.).

Annual Income	Repayment % Rate
Minimum wage–0.7X TL	% 0.6A
(0.7X+1) TL –0.8X TL	% 0.7A
(0.8X+1) TL – 0.9X TL	% 0.8A
(0.9X+1) TL - X TL	%0.9A

Table 5.2. Income Based Repayment Schedule without Threshold

Without an income threshold, the same system can be applied in a way that the repayments increase in parallel and proportion with the increase in the income. Such a system might provide much more convenience for the graduates with lower incomes compared to the threshold system.

This system, which includes income-based repayments rather than fixed installments, definitely provides convenience in repayment for the students. It is possible particularly for a new graduate to earn initially a lower wage and afterwards higher wages in his/her career. In this context, most of the new graduates will be in the lower-income group and they;

- (if the threshold system is applied) will mostly remain under the threshold, and the majority will not begin making repayments (A value might be '0'), or will make repayments in a fixed proportion to their income.

- (if the income based increasing repayment system is applied) most of them will make repayments in lower installments.

On the other hand, such a system, which will ultimately increase the credit demand of the students because of the convenience provided in repayment, might cause banks to behave reluctant in providing loans. In this system, the banks will not be interested in the convenience for the students in repayment; however, they will demand collecting the loans as soon as possible. Therefore, the banks will probably

refuse to participate in this system, which will impede the functioning of the system in prospect.

✓ *In order for the banks to participate in the system: The risks and uncertainties are undertaken by other institution(s)*

Another factor that causes the banks to refuse participating in this system is that, as mentioned above, students are in the high-risk group for the banks (with regards to repayment of the credits). The private banks will not participate in such a system and it will not work unless other institution(s) undertake(s) these risks. Therefore, firstly it should be provided that the risks and uncertainties arising from the students be undertaken by other institution(s), after which the banks will participate in the system.

System 1.c. Income-conditional Credit System Where the Credits are Provided by Private Banks and Guaranteed by the Insurance Companies

The banks will voluntarily participate in this system only if a third party guarantees the repayments, in other words, when another institution commits to pay all or most of the loan amount in case the borrower cannot make repayments. In this point, let's suppose that insurance companies undertake the risk of the loan, in other words, the insurance companies guarantee the loans of the students. In this case, the main problem is who will provide the payment for the insurance company to undertake the risk. In case a student goes into default, the insurance company repays all or part of the loan amount to the bank in behalf of students, and in return either the student or the state can make payments to the insurance company in the system.

- **Students making necessary payments to the insurance company to undertake the risk:** This alternative is definitely disincentive for the students in using the credit, since he/she has already got into a debt and is facing a high-level uncertainty for the future. In fact, the students would not like to shoulder any incremental cost other than the credit. Moreover, since the students do not have a regular wage as long as they are 'student' they cannot make payments to the insurance companies to undertake the risk. That is why these payments can only be made by the families of the students. Even in this situation, most of the students would not like to use a credit.

- **State making necessary payments to the insurance company to undertake the risk:** In order for the insurance companies to undertake the risks of the students (in order for the companies to participate in the system), a payment made by the state to the insurance companies would catalyze the participation of both the banks and the insurance companies. When the state make the necessary payments to the insurance companies, it may contribute to the insurance companies to cover the loans of the students. As explained in the second part, the state can invest in education in this way in order for the human capital to qualify and contribute to the growth and development process of the country. However, if the state participates in this system by making payments to the insurance companies, both this system becomes costly for the state (the state would like to participate in the system directly, rather than participating via the insurance companies, as will be further explained in the part 5.2), and the sustainability of the system becomes more difficult. Additionally, like the lending banks, the insurance companies would not like to undertake the risk and uncertainties (without the state's conntribution) stemming from the students, thus the system will not work effectively.

Due to the reasons mentioned above, both the banks and the insurance companies will not participate in the system without the state contribution, thereby either the system will not work or it will not be sustainable. Therefore, in the following parts, the effectiveness of the system will be analyzed by involving the public sector into the system.

5.2. Hybrid System

As discussed in detail in part 5.1, forming a credit system without the state support impedes the functioning of the system. Constituting a hybrid credit system, which includes the state support to the system in different forms, in order to provide the operability of the system will be held in this part. Accordingly, the scope of the state support for the students is limited to interest subsidy, repayment support, and pledge support which are thought to be the most important factors of the sustainability of the system.

5.2.a. Providing Real Interest Rate Subsidy for the Students by the State

Interest rate subsidy support by the public sector is important since it will reduce both the repayment cost that the students shoulder and the risk and uncertainties stemming from the market fluctutaions. Interest rate support is necessary since: while the banks are lending money to the students at the market rate of interest, the students (having borrowed at the market rate) will face high costs in repayments and this situation will be a disincentive for the students, who have uncertain future incomes, to finance their education expenses via credit. However, particulary in the countries where income contingent credit system is in use (such as Australia, look: Chapter 4.3.b.ii.), the borrowed amounts are indexed to CPI and the students are expected to make additional payments generated by the inflation rate differences. In

this context, the additional amount generated from the inflation differences might be covered by the state in order for the credit system not to be disincentive for the students. The costs for the state to cover a part or complete amount of the difference between market interest rate and the inflation are presented in part 5.2.a.i.

5.2.a.i. The Cost of Interest Subsidy, Provided by the Public Sector, for the

Government Budget

The scope of interest subsidy support for the students include not only the ones who earn less than the X TL threshold but also the ones earning above the threshold. The functioning of the system with the interest support is explained on Table 5.3.

Thousand TL												
t	1	2	3	4	5	6	7	8	9	10	11	12
Inflation (%)	0	0	0	0	0	0	0	0	0	0	0	0
Credit and Repayment												
1	35	35	35	35	0	0	-35	-35	-35	-35		
2		35	35	35	35	0	0	-35	-35	-35	-35	
3			35	35	35	35	0	0	-35	-35	-35	-35
4				35	35	35	35	0	0	-35	-35	-35
5					35	35	35	35	0	0	-35	-35
6						35	35	35	35	0	0	-35
7							35	35	35	35	0	0
8								35	35	35	35	0
9									35	35	35	35
10										35	35	35
11											35	35
12												35
Total Credit and Repayment	35	70	105	140	140	140	105	70	35	0	0	0

Table 5.3. Calculation for 2-Year-Non-Payment, 4-Year-Repayment-Based Period (For the Students in Paid Education)

About the data on Table 5.3., it was supposed that annual education fee is 35 thousand TL, and considered that the student borrowed credit for a four-year education, began repayments two years after graduation and completed the

repayments in four years. The calculations were made supposing the inflation rate as zero and considering that the students borrowed whole of the education fee.

In this context, while the banks are providing credits for only the freshmen in t=1, they provide credit for the first and second classes in t=2. In t=7, the banks begin to collect the repayments. In this situation, the students who borrowed in t=1 are beginning to make repayments of 35 thousand TL.

The total credit amounts and repayments on a semester basis are summerized in the last line of the Table 5.3. According to this, since the repayments begin in t=7 the costs of the credit decreases afterwards: decreasing to 105 thousand TL in t=7, and to 70 thousand TL in t=8. At the end of the decreasing costs, since the amount of the credit lended and the credit collected is the same after t=10, the cost of the credit decreases to '0'.

Table 5.3. explains the functioning of the system for the students in paid education. As per the students who are receiving semi scholarships, they will borrow half of their education expenses and the functioning of the system in this situation will be as shown on Table 5.4.

Thousand TL

t	1	2	3	4	5	6	7	8	9	10	11	12
Inflation	0	0	0	0	0	0	0	0	0	0	0	0
Credit and Repayment												
1	17,5	17,5	17,5	17,5	0	0	-17,5	-17,5	-17,5	-17,5		
2		17,5	17,5	17,5	17,5	0	0	-17,5	-17,5	-17,5	-17,5	
3			17,5	17,5	17,5	17,5	0	0	-17,5	-17,5	-17,5	-17,5
4				17,5	17,5	17,5	17,5	0	0	-17,5	-17,5	-17,5
5					17,5	17,5	17,5	17,5	0	0	-17,5	-17,5
6						17,5	17,5	17,5	17,5	0	0	-17,5
7							17,5	17,5	17,5	17,5	0	0
8								17,5	17,5	17,5	17,5	0
9									17,5	17,5	17,5	17,5
10										17,5	17,5	17,5
11											17,5	17,5
12												17,5
Total Credit and Repayment	17,5	35	52,5	70	70	70	52,5	35	17,5	0	0	0

Table 5.4. Calculation for 2-Year-Non-Payment, 4-Year-Repayment-Based Period (For the Students with Semi Scholarships)

Since the student will pay only half of the education fee (17,5 thousand TL), the functioning of the system for this amount is explained in Table 5.4.

✓ *Cost of the Interest Subsidy, Provided to a Non-Scholarship Student, for the Government Budget*

The calculations regarding the situation, where the state provides interest subsidy for the difference between the market interest rate and CPI, are shown on Table 5.5. Considering that the real interest rate is 5%, per-student cost is shown on the last line of Table 5.5. for the situation where the state provides interest subsidy. According to this, the total interest payment is 42 thousand TL in t=10 and afterwards.

Thousand TL												
t	1	2	3	4	5	6	7	8	9	10	11	12
Inflation (%)	0	0	0	0	0	0	0	0	0	0	0	0
Real interest (%)	5	5	5	5	5	5	5	5	5	5	5	5
Interest payment of the state		1,75	3,5	5,25	7	7	7	5,25	3,5	1,75		
			1,75	3,5	5,25	7	7	7	5,25	3,5	1,75	
				1,75	3,5	5,25	7	7	7	5,25	3,5	1,75
					1,75	3,5	5,25	7	7	7	5,25	3,5
						1,75	3,5	5,25	7	7	7	5,25
							1,75	3,5	5,25	7	7	7
								1,75	3,5	5,25	7	7
									1,75	3,5	5,25	7
										1,75	3,5	5,25
											1,75	3,5
												1,75
Total interest payment		1,75	5,25	10,5	17,5	24,5	31,5	36,75	40,25	42	42	42

Table 5.5. Calculation for Interest Subsidy in 2-Year-Non-Payment, 4-Year-Repayment-Based Period (5% Interest Support)

According to Table 5.5., in case the state provides 5 % interest subsidy to a single student, its cost to the government budget will be 42 thousand TL.

Considering that 2016 year budget expenditures were 583,7 billion TL; in case 5% interest subsidy is provided, the share of its cost among the budget expenditures is shown on Table 5.6.

t	1	2	3	4	5	6	7	8	9	10	11	12
Share for a single student	0.00000001	0.00000002	0.00000003	0.00000004	0.00000005	0.00000006	0.00000007	0.00000007	0.00000007	0.00000007	0.00000007	0.00000007
Share for 1.000 students	0.00001	0. 00002	0. 00003	0. 00004	0. 00005	0. 00006	0. 00007	0. 00007	0. 00007	0. 00007	0. 00007	0. 00007
Share for 10.000 students	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
Share for 100.000 students	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.007	0.007	0.007	0.007

Table 5.6. Share of Interest Subsidy among Budget Expenditures (5% Interest Support)

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According to the Table 5.6., in case 5% interest subsidy support is provided for a student, share of its cost among the budget expenditures is maximum 0.00000007. In this scenario, the state can allocate a 0.007 share from the budget and can provide interest subsidy support for 100.000 students. In case the state provides interest subsidy support for the students with semi or 25% scholarships, this share is 0.00000004 and 0.00000005 per student, respectively.

Table 5.7. shows the share of the cost of the support, which will be provided for the students with paid education, semi-scholarship, or 25% scholarship, and total interest payment per-student in case the interest support is 3%[26]. According to this, when 10.000 students are presented credit for whole of their education expenses its share in the budget expenditures is 0.0004 including the interest support.

	Paid	%50 Scholarship	%25 Scholarship
Total Interest Payment of a Student	25,200	12,600	18,900
Share for 1 Student	0.00000004	0.00000002	0.00000003
Share for 10.000 students	0.0004	0.0002	0.0003

Table 5.7. Share of Interest Subsidy among Budget Expenditures (3% Interest Support)

5.2.b. Providing State Debiting Support for Students in Repayment of the Credits

Providing education credit for the students enables the banks to financially expand. The reason of reluctancy in the banks for student credits is basically, as discussed before, the high risk and uncertainty factors regarding the students. However, if the risk and uncertainties of the students are minimized, the banks will voluntarily participate in the system. The most important task for the minimization of the risk and uncertainties in repayment particularly falls to the state.

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[26] The values were calculated the same with Table 5.5. and the same hypotheses. The calculations on Table 5.7. were conducted through maximum values which were fixed after t=10.

Providing income-based credit system for the students in repayment will simplify the collection of the credits in terms of enabling them to make repayments more simple. However, the banks will not, possibly, be interested in the incomes of the students, demanding a fixed repayment each month. In this part is the detailed explanation about the situation, where the student cannot make fixed repayments financially, and the amount in between is financed by borrowing from the state.

System 2.a. Credit System Including Both Fixed Income-Threshold and Income-Based Repayments

The functioning of the system, where there is an income threshold (X TL), is as follows: the students with higher incomes than this threshold level will make fixed (monthly installments will be a certain percentage of this threshold) repayments to the bank. The students below the threshold cannot afford these repayments financially. In this context; a certain percentage of the student's income (a lower amount than the fixed installments) will be paid by this student individually. As per the income-based repayment system the more the student's income, the more repayment (still below the threshold level) he/she will individually make. For the repayments of the fixed installments that the banks demand, it is expected that the student will make the fixed repayments by borrowing the difference in between. As the income level of the student increases, the complete loan will mostly be paid by the student, and the amount to be borrowed from the state will decrease (Table 5.8).

Monthly repayment installment amount demanded by the bank	Amount of the student income	Amount of the installment to be repaid by the student	Amount to be borrowed from the state
B TL	0.5X TL	K TL	(B – K) TL
B TL	0.6X TL	L TL	(B – L) TL

Table 5.8. Credit System Including Both Fixed Income-Threshold and Income-Based Repayments (for the student under the X TL thereshold)[27]

The expected increase in the repayments based on rising income, covering the difference by borrowing from the state, and decreasing amount to-be-borrowed based on increased income are shown on Table 5.8. for the stundents below a certain threshold level. According to Table 5.8., as the income of the student increases, the amount that he/she has to pay (since it will be a higher percentage of the income) will increase as well: while the initial income of the student is 0.5X TL, he/she makes K TL (a certain percentage of the income) repayments, as his/her income increases (0.6X TL), he/she will make (a higher percentage of the income) L TL. At the same time, the amount to be borrowed from the state will decrease since the income is increased from 0.5X TL to 0.6X TL (the amount to be borrowed will decrease from B-K TL to B-L TL).

By this sytem, a convenience in repayment is provided for the students (since they make a repayment in direct proportion to their incomes), who have incomes lower than the threshold level, and they are enabled to make demanded repayments by borrowing from the state in the short term. These amounts to be covered by the state are not complimentary, it is expected in the long term that the students will repay the amounts they borrowed from the state. The repayments of the amount borrowed from the state will be made in such a way that the student, who begins to earn a higher income than the threshold level, will make payments in a certain amount to the state apart from the fixed repayments being made to the banks (Table 5.9.).

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[27] $K<L<B<0.5X<0.6X$

Repayment Amount Demanded by the Bank	Amount of student income	Amount to be repaid by the student	Amount to be paid to the state
B TL	1.5X TL	M TL	(M-B) TL
B TL	3.37X TL	N TL	(M- B) TL

Table 5.9. Repaying the Amounts Borrowed from the State by the Students Whose Income Levels are Under the Threshold Level (for the students who earn higher than the X TL threshold)[28]

Considering that the incomes of the students will be lower at the initial phases of their careers and increase afterwards, it is possible for them to cover the demanded amounts by the banks via borrowing from the state when their incomes are lower, and to repay the borrowed money to the state when their incomes are higher than the threshold level. Accordingly, the student (above the threshold level) is able to pay both the amounts demanded by the banks and the amount borrowed from the state. Within the framework of these amounts, either a fixed-repayment or an income-based plan can be formed by the state. On Table 5.9., the repayments to the state are fixed. In other words, even if the income of the student increases, and even if the percentage to-be-repaid is increased from M TL to N TL (the percentage of the higher income), the student will still make the same payment (M-B TL). However, with a system based on the student income, a program can be generated where the student makes higher payments in proportion his/her increase in the income. For example, according to the Table 5.9., when the amount to-be-repaid increases from M TL to N TL in direct proportion to the increase in the student's income, the amount that the student will pay to the state will increase to N-B TL. In such a system, the state can collect the loans in a shorter period, since the higher-income students will make higher repayments.

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[28] B<M<N<1.5X<3.37X

With such a system, the banks will voluntarily participate in the system since they expect the state to make the payments of the difference amount if the students cannot afford the whole installments. Moreover, when the students cannot afford the repayments they will borrow from the state and will make repayments in proportion to their incomes. A system with such opportunities will be preferable for the students as well.

Creating an additional resource for the students by borrowing from the government budget is an additional burden for the government budget. Moreover and the most importantly, this system makes it more difficult to follow-up the repayments of the students. Therefore, the follow-up process can be simplified and the sustainability of the system might be increased by launching a fund particular to education, transferring resources to this fund, and meeting necessary financial needs via this fund. Probable cost of debiting system for the state is calculated in part 5.2.b.i.

5.2.b.i. Cost of State Debiting Support for the Budget: 2-Period State Supported Debiting for the Students below the X TL Threshold Level - 2-Period State Supported Debiting for the Students Above the X TL Threshold Level

The following calculations were made considering that the state provided 2-period debiting support for the students earning below the X TL threshold level who cannot financially afford the fixed installments demanded by the banks, and supposing that the state collected the loans (through the other two periods) when the students begin to earn higher than the X TL threshold level.

✓ *The Situation Where the State Provides Support for Half of the Loan (for 1 academic year)*

In this part, it was accepted that the state provided support for half of the credit repayments during one academic year for the students who earned below the X TL threshold level in t=7 and t=8. Table 5.10. explains the functioning of the system for one student.

Thousand TL

t	7	8	9	10
Inflation (%)	0	0	0	0
Total Debt	-35	-35	-35	-35
Borrowing from the state and repaying debt to the state	17,5	17,5	-17,5	-17,5
Repayment of the student to the bank	**-17,5**	**-17,5**	**-52,5**	**-52,5**

Table 5.10. 2 Periods Debiting Support, 2 Periods Repayment[29]

On Table 5.10., it was supposed that the student borrowed half of the amount from the state, since he/she was earning less than the X TL threshold and could not financially afford making the fixed repayments (35 thousand TL). In this time period, the student had paid in specie 17,5 thousand TL and supplied the rest by borrowing from the state. It was also supposed, in the 9th and 10th periods, that the income of the student increased to above the X TL threshold level, and made 52,5 thousand TL repayment per period repaying the debt both to the state and the bank. In this situation, the maximum amount that the state can lend is 35 thousand TL (in t=8), and it is 0.00000006 of the budget expenditures. After the 10th period, does not have

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[29]It was supposed that the inflation rate was 0 and the student repaid the loan (borrowed during four years) in 4 equal installments beginning 2 years after the graduation.

an additional burden for the budget because of collecting the loans back. Table 5.11. summarizes the functioning of the system.

Thousand TL

t	7	8	9	10	11	12
Inflation (%)	0	0	0	0	0	0
Payment to bank	-35	-35	-35	-35	-35	-35
Repayment to the state$_1$	17,5	17,5	-17,5	-17,5		
Repayment to the state$_2$		17,5	17,5	-17,5	-17,5	
Repayment to the state$_3$			17,5	17,5	-17,5	-17,5
Repayment to the state$_4$				17,5	17,5	-17,5
Repayment to the state$_5$					17,5	17,5
Cost to the state	17,5	35	17,5	0	0	0
Share among budget expenditures	0.00000003	0.00000006	0.00000003	0	0	0

Table 5.11. Share of the 2-Period Repayment-Based Debiting Support among Budget Expenditures

Carrying out calculations similar to the Table 5.11., in case the student borrowed the complete amount from the state in t=7 and t=8, it was observed that the share of debiting support among budget expenditures was maximum 0.00000006.

5.2.b.ii. Cost of State Debiting Support to the Budget: 2-Period State Debiting Support Provided to the Students under the X TL Threshold Level - Students Above the X TL Threshold Level Repaying the State Debt in 4 Periods (cost per student)

The functioning of the system is as follows (Table 5.12.), in case the state provides debiting support for half of the loan that the student borrowed from the bank.

Thousand TL

t	7	8	9	10	11	12	13	14	15	16
Inflation (%)	0	0	0	0	0	0	0	0	0	0
Payment to bank	-35	-35	-35	-35	-35	-35	-35	-35	-35	-35
Borrowing from state and repayment$_1$	17,5	17,5	-8,75	-8,75	-8,75	-8,75				
Borrowing from state and repayment$_2$		17,5	17,5	-8,75	-8,75	-8,75	-8,75			
Borrowing from state and repayment$_3$			17,5	17,5	-8,75	-8,75	-8,75	-8,75		
Borrowing from state and repayment$_4$				17,5	17,5	-8,75	-8,75	-8,75	-8,75	
Borrowing from state and repayment$_5$					17,5	17,5	-8,75	-8,75	-8,75	-8,75
Cost to state	17,5	35	26,25	17,5	8,75	0	0	0	0	0
Share among the budget expenditures	0.00000003	0.00000006	0.00000004	0.00000003	0.00000001	0	0	0	0	0

Table 5.12. Share of the 4-Period-Repayment Debiting Support Among the Budget Expenditures

Within the framework of the calculations on the Table 5.12., supposing that the state provided debiting support for 2 periods and collected these debts in 4 periods, the cost of a student to the government budget is maximum 0.00000006 and debiting support did not have an additional burden on the budget after the 12th period. If the state, similarly provides support for a student in his/her complete debt, its cost to the budget is maximum 0.00000006.

5.2.c. Providing State Guarantee for Repayments of the Credits

In order for the banks to participate in the system, the state should provide pledge support to students for repayments. Repayment conditions should meticulously be

determined with regards to collecting most of the credits. However, in case a fraction of the students go into default, the state makes the payments on behalf of the ones who cannot make payments. Thus, it will be an additional burden for the budget. The cost of non-paying loans to the budget is shown on Table 5.13.

Million TL							
t	7	8	9	10	11	12	13
Inflation (%)	0	0	0	0	0	0	0
Loan and Repayment	-35	-35	-35	-35			
	0	-35	-35	-35	-35		
	0	0	-35	-35	-35	-35	
	35	0	0	-35	-35	-35	-35
	35	35	0	0	-35	-35	-35
	35	35	35	0	0	-35	-35
	35	35	35	35	0	0	-35
		35	35	35	35	0	0
			35	35	35	35	0
				35	35	35	35
					35	35	35
						35	35
Total Non-Paying Loans	-3,5	-7	-10,5	-14	-14	-14	-14
Share Among Budget Expenditures	0.000006	0.000012	0.000018	0.000024	0.000024	0.000024	0.000024

Table 5.13. Cost of Possible 10% Non-Paying Loans to the Government Budget (for 1000 students)

Table 5.13. shows that, in case 1.000 students cannot pay 10% of their loans, the non-paying loan amount will be maximum 14 million TL, which will have a share of 0.000024 among budget expenditures. In case that 10 thousand and 100 thousand students go into default and the state makes the repayments on behalf of them, their shares among the budget expenditures are 0.00024 and 0.0024, respectively.

In case the non-paying loan is 5%, the maximum shares among the budget expenditures are shown on Table 5.14.

	Share Among the Budget	Share Among the Budget	Share Among the Budget
	(1000 student)	(10.000 student)	(100.000 student)
Non-Paying Loan Rate (%5)	0.000012	0.00012	0.0012

Table 5.14. Cost of Possible 5% Non-Paying Loans to the Government Budget

Table 5.14. states that, in case the non-paying credit rate is 5%, 1.000 students go into default, and the state makes the repayments on behalf of them, its share among the budget expenditures is 0.000012.

Within the framework of the abovementioned statements, the share of the support provided by the state among budget expenditures is summarized on Table 5.15.

%5 Interest Subsidy Support	4 Periods Repayment Based Debiting Support	Cost Based on non-paying credits (Rate of non-paying credit=%10)	Total
0.00007	0.00006	0.000024	**0.00015**

Table 5.15. Share of the State Support Among Budget Expenditures (for 1.000 students)[30]

According to Table 5.15., the cost of a thousand students that the state has to bear depending on its role in the credit system constitutes only 0.00015 of the 2016 budget expenditures. The state can contribute to this system by allocating 0.015% from the budget expenditures.

5.3. Launching Education Guarantee Fund (EGF) and Addressing Financial Needs of the Students

As explained above, the existence of such a system for education guarantees the condition where the students cannot make whole of their repayments. This capacity will undaubtedly abolish the reluctency of the banks in providing credits for the students, simplifying their participation in the system (by abolishing the possible problems in providing credits). With Education Guarantee Fund, as is in the part 5.2,

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[30]Calculations were conducted over maximum values.

the debt of the students are guaranteed by the state. It is important that which institution(s) will transfer the necessary resources. It can be provided either by the Treasury or by a source such as European Investment Fund.

The basic function of the fund is as follows: It is to provide additional financial support to students (by helping them borrow) and provide interest subsidy support in order to simplify the access of the students to financing (vouching for their repayments), who cannot use credit due to insufficient pledge. Thus, with the help of this fund, the students will be able to receive necessary financial support from the banks.

System 3.a. Forming the Financial System by Bringing Together the Student and the Bank via EGF

The basic functions of the EGF are explained below:

- Providing pledge support for the students who cannot use credits due to insufficient pledge:

In the system, the surety that the students pledge is their future income. However, the uncertainty of the future income for the banks and its risks cause banks to behave reluctant in providing credits for the students. Therefore, providing pledge for the students, the basic function of EGF is to guarantee the banks about complete or partial repayments in case the students do not make repayments.

- Interest Subsidy Support:

As explained in 5.2.a, another function of EGF apart from providing pledge for the students is to provide interest subsidy support for the students. The fund can reduce the burden of the students by covering complete or partial interest difference

between market interest rate and CPI, decreasing the cost originating from credit. The interest subsidy support is complimentary, and it's financed by the own sources of the fund. The state is expected to transfer the interest subsidy to the banks. Students only pay the amount originating from inflation.

- Enabling Borrowing from EGF in Repayment:

As explained in detail in 5.2.b, the support of this fund in repayment functions in a way that the EGF makes the payments to the banks on behalf of the students who are below the threshold level and cannot afford the fixed installments demanded by the banks. The difference between the amount demanded by the banks and the certain percentage of the student's income is covered by the fund. This amount, which will be lended by the fund to the students, is not fixed and varies according to the student's income. When the income of the student is over the threshold, the difference between the certain percentage of the income and the repayment amount is used in repaying to the fund.

What important in repayments is an accurate following-up process of the repayments. Therefore, certain specialists can be employed in the fund for following-up the loans. Moreover, after the graduate started in the business, the repayments can be made via automatic checkoffs by the employer in certain times and in certain amounts. In this point, the employer can transfer the amouont collected via automatic checkoff to the account of the fund or the bank. Such a system helps collect the loans simpler and in time.

In cases such as death of the student, leaving the school for a while, interruption of education, lack of employment, etc., the details of who will make the payments to the banks should be determined in detail by the borrower. Since there is the state

guarantee in such cases, either the fund can undertake the complete loan, or the fund can partially cover and the rest can be paid by the family of the student. A certain period can be allowed for the students for employment. As examined in the 4th part, in the income-based credit systems, the student begins making repayments two years after the graduation. The task falls to the grovernment in that the banks demanding the repayments two years after graduation.

The functioning of the system can be designed in such a way: the students who are eligible for the private foundation universities apply to the banks for credit. The applications matching the criteria (the student having a sufficient score for the relevant university etc.) are conveyed to the EGF. As EGF approved the applications, the bank transfers the credit amount to the account of the university that the student will receive education. Transferring the amount to the account of the university rather than the student provides prevention of its use for other purposes.

5.4. Comparison of Private, Hybrid System and Education Guarantee Fund

As discussed in detail in the previous parts, it seems impossible for a private system to function alone (without state support). Particularly for participation of the students and banks in the system and sustainability of the system, other institution(s) should undertake the risks and uncertainties of the students. Therefore, it is evaluated that the most effective and least costly system is a hybrid credit system, which will be supported by the state. However, as mentioned in part 5.2, launching a fund, which will fulfil the functions of the state, would make the system more effective. Particularly with the help of this fund, the system becomes more sustainable since the basic finance is met from the sources of the fund. Thus, without an additional burden to the state budget, it specially helps collecting the repayments in time and

accurately, simplifying the follow-up of the loans. Therefore, it is vital to design such a system in order to create additional financing alternatives for the students.

In such a system; the cost of credit for a thousand students is 0.015% of the budget expenditures transferred to the fund[31]. The factor that increases the cost most is the real interest subsidy support, which will encourage more students to participate in the system. Providing this support will eliminate the disincentives, which are based on unforeseen interest payments due to fluctuating market interest rates, about participation in the system. In this respect, providing 5% interest support for the credits by the fund in 0.007% of the budget expenditures can help a thousand students benefit from this fund. Providing debiting support for the students in case they fail to make the fixed repayments demanded by the banks encourages more banks to integrate into the system. Although providing debiting support for a thousand students (4-period-repayment-based) creates 0.006% incremental cost, it will encourage the banks, which will realize that the students can borrow from the state even if they cannot afford the fixed repayments, to participate in the system. That the debts of the students, who fail to make repayments financially and go into default, are guaranteed by the state is another factor enabling the banks and students to take part in the system. Even in case that the non-paying credit rate is 10% within all the credits, a thousand students go into default, and the fund makes their repayments, all of their cost is 0.002% of the budget expenditures. Moreover, this cost can even be reduced by regulations such as providing convenience in the repayments of the students, creating a regular follow-up system for an in-time and complete repayment of the debts, enhancing the demand and the salaries of skilled labor in labor market, etc.

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[31] The calculations on Table 5.15. in part 5.2.c are grounded for the 0.015 % rate.

Along with this porposed system, alternative systems can be developed decreasing all the costs. However, providing support to a thousand students via such a fund at least helps the banks financially expand and students to become more qualified individuals, thus it can contribute to the growth and development of the country.

CHAPTER VI

CONCLUSION

Observing the faster growth processes of the countries, where there is more investment in the human capital, the role of the education on the growth has been focused recently. The studies in recent years feature that education has been the decisive factor in the fast growth of the East Asian countries such as South Korea, Singapore, Hong Kong, and Taivan. The most important reason is that the skilled human capital not only produces value added products but also uses high-tech products faster and more efficiently. The positive effect of education on the growth process of the countries is proved with theoretical and empirical research studies, and it was concluded that the differences in the human capital of the countries were important factors in the differences of the income per capita. The most important step for the human capital to gain more quality and participate in the workforce is the higher education process. Therefore, it is observed that many countries are investing more then ever in the higher education process. In this sense, it was studied in the world to develop credit mechanisms that would lend to the higher education students for education, preventing their financial limitations to be obstacles on their ways. In Turkey, Higher Education Credit and Hostels Institution was established with the 1961 constitution. Thus, the state has provided education credit for the students in financial impossibility since 1962, contribution credits since 1985, and scholarship support since 2004 (Yurtkur). However, it is observed that there is not a private lending system in Turkey, providing finance support for the students with financial impossibility.

In this study, it was determined from the data provided by CoHE and supported via the survey study that the students, who had sufficient scores from the university exams conducted by the Student Selection and Placement Center (ÖSYM) for non-scholarship, 25% scholarship, and 50% scholarship education in the best foundation universities, did not prefer education in these schools. Additionally, the best foundation universities in Turkey (Koç and Bilkent Universities) were determined on three criteria. The first one of these criteria was the preferences of the students according to the results of the university exams. According to this, full-scholarship program of Koç and Bilkent Universities were in the first five for the year 2016. In other words, the most successful students in Turkey prefer to be placed in Koç and Bilkent Universities. The second criterion is the university ranking list of the top ten university ranking institutions in the world. According to the rankings for the year 2016, it was observed that these universities were among the top ten universities in Turkey. The third criterion is the survey study conducted on the higher education students. Among the eighteen universities addressed to the students for evaluation, the first two universities were Koç and Bilkent Unviersities.

The motive behind the fact that although the students had sufficient scores for education in these schools with non-scholarship, 25% scholarship, or 50% scholarship, was evaluated to be financial shortage of the students to afford the paid education demanded by these schools. It was detected from their university exam results that the students with sufficient scores (to study at best foundation universities) preferred the state universities down on the ranking list determined by the top ten university ranking institutions. This case was also proven by the conducted field research. During the field research conducted on the students in the Economy, and Electric-Electronics Engineering Departments in the Çukurova,

Ankara Yıldırım Beyazıt, Eskişehir Osmangazi Universities, the students were addressed questions regarding their demographic information, the basic factors in their university preferences, and their perceptions about the education quality of the universities and about lending mechanisms. As the conclusion of the field research, the students evaluated the education quality of Koç, Bilkent, Sabancı, Marmara, and TOBB universities as "very well", and evaluated the universities ranked down on the list or even not ranked at all by the university ranking institutions such as Uludağ, Selçuk, Sakarya, Erciyes, Eskişehir Osmangazi, Anadolu, Yıldırım Beyazıt as "medium". Accordingly, the rankings based on perceptions of the students about the education quality of the universities, and university ranking lists of the ranking institutions, and/or the student preferences in the unviersity placements overlap. However, the students preferred the state universities down on the list instead of the foundation universities that they evaluated as "very well". Furthermore, 253 students participating in the field research were asked whether they would choose Koç and Bilkent Universities if they had sufficient scores for full scholarship, and 87% of them mentioned that they would prefer these universities if they had sufficient scores, and 12,6% of the students stated that they would not, even if they had sufficient scores. As a reason, they stated that it was because they thought that they could not adapt to the social atmosphere, and if they had sufficient scores their priority would be for the best state universities. As the reason of their state university priority, the students at the least mentioned that, it was because the possibility of losing the scholarship due to being unsuccessful.

Most of the students mentioned that they would prefer the Koç and Bilkent Universities with full scholarship and did not prefer these universities with payment, which showed that the students did not have sufficient finance to afford the education

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fees. When the students were asked whether they would accept paid education in these universities if they had the chance of a credit system to afford the expenses, at least half of the students thought negative about financing their expenses via borrowing. These results show that at least half of the students did not want to establish a lien on the long term and made a short term preference instead.

The motives behind the fact that the students do not prefer education via borrowing is that 30,8% of the students cannot predict their incomes in the first five years after graduation and 30% of them predicted to earn 2500-4000 TL per month. On the other hand, another reason for the students not to prefer education via borrowing can be the fact that 68,8% of them considered the employment opportunity in university preference. The fact that more than half of the students consider employment factor as the basic criterion in university preference, manifests the employment apprehensions after graduation. When the two possibilities are evaluated together, the uncertainties that the students face after graduation might be the cause for them to not prefer education via borrowing due to apprehension about being unable to make the repayments. However, if there is an opportunity for the students to postpone the repayments in case they cannot find a job after graduation, and another opportunity for the students with lower income to make the repayments in direct proportion to their incomes, might encourage most of them to finance their education via borrowing. Thus, the opportunity inequality that these students face can be prevented.

When the credit systems in the other countries were examined in order to generate an effective and sustainable credit system, it was concluded that there were three types of credit systems in practice as mortgage-type, income-contingent type, and hybrid. The best application of the mortgage-type credit system was in the USA,

while the best implementation of the income-contingent credit system was in the Australia, and the only country that used the hybrid system was Iceland, which was explained in the fourth section with implementation details. In the mortgage-type credit system, which can be classified as a private student credit system, the loans have been provided by the private banks to the students in the USA since 1960s. However, since this system was indexed to high interest rates and includes repayment in fixed installments, it was resulted in an increase in the student debts and non-repayment problems. Therefore, government credits, which permits students to repay based on their incomes and takes their debts under the state guarantee, have been implemented by the US government for the students with lower incomes. As per the income-contingent credit system, it was firstly applied in Australia in 1989. Since it was used effectively, several other countries adopted income-contingent credit system, as well. These credits, which require income-contingent repayments after graduation, are generally provided by the governments. In this study, a hybrid system is suggested, in which the credits are generally provided by the banks, however, the students make repayments in direct proportion to their incomes (income-contingent loan system).

The students are in high-risk group regarding the repayments. Therefore, it was supposed that the banks would be reluctant for participating in the system. It was also considered that the students, who could not predict their incomes after graduation, who had the apprehension of non-repayment, and who had insufficient collateral for borrowing, would not want to borrow from the banks. Accordingly, it was concluded that it should be the state, which will bring the students and the banks together. From this point of view, it was suggested in this study that firstly, the state generates an Education Guarantee Fund (EGF). Second, this fund provides collateral for the

students, who cannot use credit due to insufficient collateral. Third, the state pays for the real interest difference, in between the nominal interest rate demanded by the banks and the inflation rate, to the banks on behalf of the students. Lastly, the state provides lending support for the students, who cannot make repayments due to their low incomes. As the conclusion of the estimations, it is foreseen that in case a debt support is provided with 5% interest subsidy and repayments in four periods, and in case the cost of non-paying loans of 10% of the students is compensated, the share of its cost in the 2016 year budget expenditures is 0.015% for a thousand students. Moreover, it was concluded that generation of EGF will create the most effective and sustainable system among all of the existing credit systems. By generating EGF and abolishing the finance limitations of the higher education students, it is expected that the quality of the human capital will increase and it will accelerate the growth and development process of our country.

In addition, there are also certain criteria for such a system such as fairness, sustainability, accessibility, determination of foundation universities and departments. In this study, the best foundation universities and better performing students who cannot take education due to financial constraints in these schools are handled for fairness of the scheme. However, different mechanisms can be developed to encourage students to take part in a loan scheme: additional tax payments, other income-based systems etc. In addition, it was assumed that installments were paid in six years (2 years nonpayment and 4 years repayment). It is very short term in terms of repayments, but the reason for a determination is explaining basic functioning of the system. It should be also noted that as the repayment period increase, the cost of the system increases more. However, these are the subject of another study and have not been addressed in this study.

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APPENDIX

A.1. Education Attainment for Population Aged 15 and Over

Educational Attainment for Total Population, 1950-2010											
									Barro R. & J.W. Lee		
									v. 2.1, Feb. 2016		
			Highest level attained						**Avg. Years of Total Schooling**	**Avg. Years of Tertiary Schooling**	**Population (1000s)**
Country	**Year**	**No Schooling**	**Primary**		**Secondary**		**Tertiary**				
			Total	**Completed**	**Total**	**Completed**	**Total**	**Completed**			
			(% of population aged 15 and over)								
Australia	1950	1.3	44.8	28.7	43.2	21.3	10.8	6.2	8.04	0.34	6040
	1955	1.1	40.6	23.9	46.6	24.5	11.7	6.7	8.27	0.37	6533
	1960	1.0	36.5	19.9	49.9	28.0	12.6	7.3	8.53	0.40	7183
	1965	0.8	31.3	16.9	53.7	32.3	14.2	8.0	8.93	0.44	8105
	1970	0.8	23.7	12.7	56.3	36.6	19.3	10.8	9.70	0.60	9057
	1975	1.1	12.8	6.6	65.5	45.7	20.7	11.6	10.52	0.65	9865
	1980	0.8	6.1	3.2	69.9	51.8	23.2	13.1	11.20	0.73	10937
	1985	1.1	7.8	4.2	67.5	52.4	23.5	13.2	11.20	0.73	11973
	1990	1.1	9.3	5.2	65.3	52.8	24.3	13.9	11.18	0.76	13178
	1995	1.4	10.8	6.3	60.4	50.6	27.5	15.9	11.20	0.87	14009
	2000	1.1	11.2	6.8	65.3	57.0	22.4	13.2	11.07	0.71	15028
	2005	0.9	10.2	6.6	62.5	56.0	26.4	15.6	11.38	0.84	16199
	2010	0.7	7.6	5.2	60.7	38.5	31.0	18.5	11.54	0.99	17323
Canada	1950	2.0	49.9	25.7	39.5	16.4	8.6	4.3	7.60	0.26	9660
	1955	1.7	47.1	24.8	40.3	17.1	10.9	5.6	7.93	0.33	10684
	1960	1.4	43.2	23.5	42.0	18.1	13.4	7.0	8.34	0.41	11901
	1965	1.3	38.3	21.4	45.1	16.7	15.3	7.9	8.65	0.46	13110
	1970	1.1	32.0	16.8	48.2	17.4	18.7	9.7	9.14	0.57	15179
	1975	1.4	24.3	10.8	51.6	18.9	22.7	12.7	9.70	0.71	17085
	1980	1.6	19.1	8.8	53.9	20.3	25.4	14.9	10.15	0.81	18942
	1985	1.0	16.7	6.8	63.9	24.7	18.4	8.1	9.94	0.53	20338
	1990	0.8	13.5	5.4	64.9	27.3	20.8	9.9	10.33	0.61	21968
	1995	0.9	11.4	5.0	63.6	29.4	24.2	11.5	10.71	0.71	23330
	2000	0.9	9.3	3.6	64.0	30.2	25.8	13.9	10.95	0.79	24830
	2005	0.8	6.0	2.7	53.1	32.1	40.1	20.5	12.03	1.21	26588
	2010	0.7	4.8	2.2	50.6	31.8	43.9	22.7	12.32	1.33	28292
France	1950	0.3	89.4	40.0	8.7	2.3	1.6	0.9	4.33	0.05	32331
	1955	0.3	88.1	40.5	9.7	2.5	1.9	1.1	4.45	0.06	32807
	1960	0.3	89.8	33.3	7.7	2.9	2.2	1.3	4.20	0.07	33637
	1965	1.1	84.9	36.4	10.4	4.2	3.7	2.1	4.65	0.12	36274
	1970	1.1	83.8	39.2	12.4	5.1	2.7	1.5	4.75	0.08	38171
	1975	1.0	71.5	32.3	20.1	8.0	7.4	3.9	5.76	0.23	40105
	1980	1.0	67.6	27.8	23.8	9.2	7.7	3.7	5.96	0.23	41876
	1985	5.4	51.7	26.8	33.2	16.7	9.7	4.9	6.91	0.29	43562
	1990	8.0	39.8	23.8	40.3	21.6	11.9	5.8	7.65	0.35	45248
	1995	5.0	31.0	21.6	49.1	28.3	14.9	7.2	8.82	0.44	46961
	2000	2.7	23.7	18.2	55.9	33.8	17.8	8.4	9.75	0.52	48229
	2005	1.5	21.1	17.5	58.9	35.9	18.6	8.7	10.12	0.55	49502
	2010	1.5	16.6	15.3	59.0	38.2	23.0	10.6	10.68	0.67	50470
Germany	1950	10.3	68.3	42.1	18.8	5.5	2.6	1.5	6.80	0.08	52523
	1955	2.7	74.3	46.6	20.2	6.7	2.9	1.6	7.43	0.09	55420
	1960	2.6	73.8	46.6	20.6	7.8	3.1	1.8	7.49	0.10	57323
	1965	2.5	73.7	48.8	20.6	8.9	3.2	1.9	7.43	0.10	58606
	1970	4.5	74.3	51.3	18.5	8.7	2.7	1.6	7.05	0.09	60020
	1975	5.0	72.6	51.1	17.7	9.1	4.7	2.7	6.98	0.15	61743
	1980	5.2	68.9	49.8	20.1	11.1	5.7	3.3	7.03	0.18	63814
	1985	5.1	65.2	48.0	23.4	13.9	6.4	3.7	7.18	0.20	65244
	1990	5.1	45.0	33.6	37.1	23.0	12.8	7.6	8.60	0.41	66657
	1995	5.5	33.3	25.6	45.6	30.2	15.6	9.3	9.44	0.50	68395
	2000	5.1	25.9	20.1	51.6	35.5	17.4	10.5	10.06	0.56	69490
	2005	4.6	5.3	4.2	72.1	51.2	18.0	10.9	11.65	0.58	70864
	2010	1.8	3.7	2.9	73.0	54.8	21.5	13.1	12.37	0.69	71607
Italy	1950	14.2	73.9	44.5	10.7	4.1	1.2	0.7	4.21	0.04	34706
	1955	12.3	72.5	45.6	13.6	4.8	1.6	0.9	4.54	0.05	36453
	1960	10.6	70.8	46.7	16.9	5.9	1.7	1.0	4.86	0.05	37765
	1965	7.8	69.9	47.7	20.1	6.7	2.1	1.2	5.23	0.07	39450
	1970	5.9	67.0	47.8	24.9	8.3	2.2	1.3	5.63	0.07	40597
	1975	6.4	59.4	45.8	31.1	10.5	3.2	1.9	6.16	0.10	42004
	1980	6.4	50.6	41.6	39.7	13.9	3.3	1.9	6.71	0.10	43865
	1985	8.4	41.8	36.5	45.2	17.3	4.5	2.6	7.18	0.14	45512
	1990	8.3	35.7	32.4	50.1	20.2	6.1	3.5	7.70	0.19	47722
	1995	7.6	29.4	27.2	55.5	23.6	7.7	4.5	8.27	0.24	48732
	2000	7.0	24.4	22.9	60.4	28.5	8.3	5.0	8.78	0.27	49468
	2005	6.9	20.8	19.7	63.2	31.9	9.1	5.6	9.15	0.29	49948
	2010	5.6	17.7	16.4	65.6	34.5	11.1	6.8	9.63	0.36	50210
Japan	1950	4.7	59.9	38.0	31.0	19.1	4.5	1.6	6.73	0.12	53981
	1955	3.5	55.3	35.6	36.0	22.8	5.3	2.1	7.19	0.15	59662
	1960	2.4	47.2	30.6	44.8	26.9	5.6	2.7	7.76	0.17	65669
	1965	1.5	52.6	35.9	40.6	19.6	5.4	2.3	7.48	0.15	73234
	1970	0.7	50.4	35.7	41.3	20.2	7.6	3.6	7.83	0.22	79260
	1975	0.4	44.8	32.0	43.4	22.2	11.5	5.7	8.38	0.34	84415

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Country	Year										
	1980	0.3	38.7	28.2	45.1	31.0	15.9	5.0	9.10	0.42	89295
	1985	0.3	33.5	24.8	47.7	32.9	18.6	10.8	9.63	0.59	94840
	1990	0.2	32.1	24.1	46.1	29.7	21.5	12.5	9.82	0.68	100808
	1995	0.2	23.1	17.8	52.3	34.6	24.4	14.3	10.51	0.77	105454
	2000	0.2	18.9	14.7	53.8	37.4	27.1	16.2	10.94	0.86	108437
	2005	0.2	15.8	12.3	54.7	39.6	29.4	17.9	11.30	0.94	110156
	2010	0.1	11.7	9.1	57.6	41.0	30.6	18.9	11.60	0.99	110797
Turkey	1950	78.8	16.2	7.9	4.2	1.9	0.8	0.4	1.11	0.03	12884
	1955	73.2	21.0	10.5	4.9	2.3	0.9	0.5	1.38	0.03	14559
	1960	66.1	26.9	14.9	6.1	2.9	1.0	0.5	1.76	0.03	16272
	1965	59.8	32.0	18.5	7.1	3.4	1.1	0.6	2.08	0.03	18276
	1970	54.8	34.8	21.3	9.0	4.2	1.4	0.7	2.45	0.04	21165
	1975	47.7	39.3	25.9	11.6	5.5	1.4	0.7	2.92	0.04	24152
	1980	40.8	42.1	29.3	14.1	6.9	3.0	1.6	3.55	0.09	27597
	1985	31.2	48.6	36.1	8.2	4.1	12.0	6.2	4.58	0.36	32081
	1990	27.4	47.3	37.0	14.3	7.3	11.0	5.8	5.01	0.34	36835
	1995	23.8	47.4	42.0	18.8	9.9	10.0	5.3	5.44	0.31	41989
	2000	15.3	48.9	40.9	26.7	14.8	9.1	4.9	6.10	0.28	47311
	2005	11.9	47.2	40.6	33.3	18.2	7.6	4.2	6.47	0.24	51830
	2010	9.2	43.0	36.6	38.6	20.5	9.3	5.3	7.05	0.29	56541
USA	1950	2.2	41.7	19.7	42.9	24.6	13.1	6.3	8.40	0.39	115216
	1955	2.2	37.9	18.1	45.5	26.9	14.5	7.1	8.75	0.43	120600
	1960	2.0	33.5	16.3	48.8	30.3	15.7	8.5	9.17	0.48	128761
	1965	1.6	23.0	12.2	57.2	37.2	18.1	9.0	10.03	0.54	138996
	1970	1.4	15.2	8.6	62.5	42.8	20.9	11.4	10.78	0.65	150553
	1975	1.2	8.9	5.3	63.1	45.2	26.7	13.3	11.46	0.80	164741
	1980	0.8	5.0	3.2	64.3	49.0	29.9	16.7	12.03	0.93	179012
	1985	1.1	7.2	4.6	54.4	40.9	37.4	18.5	12.08	1.12	190451
	1990	1.2	8.6	5.6	47.2	36.0	43.1	20.7	12.20	1.28	199952
	1995	0.6	3.1	2.1	52.2	38.3	44.2	20.4	12.59	1.29	210111
	2000	0.4	2.8	2.0	48.3	30.2	48.5	23.0	12.64	1.43	222901
	2005	0.4	2.7	1.9	47.4	36.0	49.5	22.4	12.86	1.44	236267
	2010	0.4	2.8	2.0	43.0	36.2	53.9	26.8	13.18	1.61	249660
United Kingdom	1950	2.2	72.9	44.9	23.4	2.0	1.5	0.9	6.39	0.05	38691
	1955	2.2	69.8	43.6	26.5	2.4	1.6	0.9	6.61	0.05	38870
	1960	2.1	66.1	41.6	30.4	2.6	1.5	0.9	6.86	0.05	39578
	1965	2.1	60.5	40.2	32.9	4.7	4.5	2.6	7.46	0.14	41112
	1970	2.2	55.7	38.5	34.5	5.6	7.6	4.4	7.91	0.24	41534
	1975	2.3	51.0	35.9	37.2	6.3	9.5	5.5	8.25	0.30	42490
	1980	3.3	45.7	33.0	41.5	7.1	9.6	5.5	8.41	0.30	43928
	1985	3.2	41.2	30.3	44.7	7.2	10.9	6.2	8.68	0.34	45230
	1990	3.2	37.5	28.0	44.0	7.1	15.4	9.0	9.10	0.49	45950
	1995	3.3	34.1	26.2	43.9	7.3	18.8	11.1	9.44	0.60	46576
	2000	2.9	28.8	22.4	46.7	9.5	21.6	12.8	9.92	0.69	47484
	2005	1.3	23.1	18.2	52.6	31.2	23.1	13.8	11.10	0.74	48969
	2010	0.2	14.9	11.8	59.5	47.3	25.5	15.3	12.24	0.82	50276
China	1950	70.6	20.8	4.8	8.2	1.8	0.4	0.2	1.61	0.01	368715
	1955	64.1	26.0	6.4	9.4	2.1	0.5	0.3	1.96	0.02	383044
	1960	56.9	30.0	9.9	12.4	2.9	0.7	0.4	2.51	0.02	401694
	1965	48.5	34.9	13.4	15.8	3.7	0.9	0.5	3.11	0.03	436196
	1970	39.5	39.2	17.7	20.4	4.9	0.9	0.5	3.82	0.03	500636
	1975	33.0	39.7	19.3	26.4	6.5	0.9	0.5	4.48	0.03	561430
	1980	24.8	40.7	21.3	33.7	9.4	0.9	0.5	5.31	0.03	644245
	1985	22.6	38.4	21.3	37.6	14.3	1.4	0.8	5.72	0.04	745898
	1990	22.2	34.6	19.9	41.3	19.9	1.9	1.1	6.04	0.06	835430
	1995	16.0	32.9	19.4	47.9	25.2	3.3	1.9	6.79	0.10	896920
	2000	11.0	30.4	18.3	54.1	27.5	4.6	2.8	7.38	0.15	958307
	2005	7.7	27.1	16.8	60.4	26.9	4.8	2.8	7.69	0.15	1034076
	2010	5.4	23.7	14.8	66.5	22.9	4.5	2.7	7.95	0.14	1090693
Indonesia	1950	76.1	21.7	7.3	2.1	0.5	0.1	0.0	1.09	0.00	48383
	1955	72.6	24.8	8.4	2.5	0.6	0.1	0.0	1.25	0.00	52856
	1960	67.4	29.0	11.3	3.5	0.9	0.1	0.0	1.57	0.00	57570
	1965	56.9	37.6	16.4	5.2	1.3	0.3	0.1	2.17	0.01	62448
	1970	45.4	46.5	21.1	7.8	2.1	0.4	0.2	2.84	0.01	69422
	1975	38.8	50.9	20.0	9.8	3.2	0.6	0.2	3.19	0.02	78808
	1980	31.9	55.1	20.6	12.4	5.2	0.6	0.3	3.63	0.02	89388
	1985	39.5	41.4	19.1	17.6	7.7	1.5	0.8	3.86	0.05	102445
	1990	43.6	30.4	16.6	24.2	10.9	1.8	1.0	4.18	0.06	116420
	1995	32.5	44.3	26.1	21.2	9.8	2.1	1.2	4.62	0.06	131181
	2000	22.6	54.8	35.2	20.4	9.7	2.1	1.2	5.15	0.07	146081
	2005	14.5	50.7	34.0	30.1	15.0	4.7	2.7	6.41	0.15	159726
	2010	7.5	44.2	29.3	41.9	22.1	6.4	3.7	7.61	0.20	172622
Republic of Korea	1950	27.9	62.3	53.5	8.3	4.3	1.5	0.7	4.50	0.04	11003
	1955	22.8	62.7	55.1	12.7	6.4	1.8	0.8	5.02	0.05	12993
	1960	42.6	36.9	32.5	17.8	8.7	2.6	1.4	4.20	0.08	14518
	1965	31.7	39.6	37.7	24.8	11.0	4.0	2.2	5.32	0.12	16194
	1970	24.3	39.1	37.6	30.8	13.4	5.8	3.2	6.19	0.18	18495
	1975	17.2	36.4	35.0	39.9	18.7	6.6	3.5	7.12	0.20	21962
	1980	13.1	28.0	27.1	49.8	26.1	9.1	4.8	8.13	0.28	25163
	1985	10.9	20.9	20.2	54.7	32.2	13.5	7.2	9.00	0.41	28577
	1990	8.1	16.1	15.3	58.7	39.0	17.2	9.4	9.85	0.53	31793
	1995	6.7	13.9	13.2	57.2	42.9	22.2	12.9	10.49	0.70	34487
	2000	5.9	11.8	11.2	52.0	39.6	30.2	19.1	11.06	0.99	37028
	2005	5.9	12.0	9.8	49.6	42.9	32.5	22.1	11.46	1.07	38925
	2010	3.4	9.6	8.8	45.3	35.5	41.6	30.0	12.05	1.43	40868
Russian Federation	1950	20.2	50.4	17.0	26.3	7.6	3.2	1.3	3.83	0.09	73427
	1955	11.3	53.3	18.5	31.9	9.6	3.6	1.4	4.41	0.10	81590
	1960	9.4	52.2	18.5	34.6	11.5	3.8	1.3	4.67	0.10	84140
	1965	7.5	45.0	16.8	41.6	14.6	5.9	2.3	5.34	0.16	88933
	1970	5.7	39.3	15.7	48.9	19.6	6.1	2.4	5.94	0.17	95753
	1975	6.4	31.0	13.2	52.2	24.1	10.3	4.0	6.69	0.29	102952
	1980	6.9	23.9	10.9	53.4	27.8	15.8	6.2	7.59	0.44	108505
	1985	7.0	17.7	8.5	50.4	28.9	24.9	9.8	8.57	0.69	110623
	1990	6.5	13.0	6.5	48.4	30.9	32.2	13.0	9.46	0.90	113952
	1995	4.3	10.0	5.3	48.7	28.5	37.0	13.3	9.94	1.01	116739
	2000	1.0	7.8	4.3	44.5	30.5	46.7	19.3	10.90	1.32	119858
	2005	0.9	7.0	4.0	39.4	27.7	52.8	21.8	11.20	1.49	121315
	2010	0.9	5.4	3.2	34.8	23.8	59.2	24.7	11.53	1.68	118489
Argentina	1950	14.1	75.3	28.8	9.6	4.4	1.0	0.6	4.85	0.03	11915
	1955	12.3	73.9	29.0	11.9	5.7	1.9	1.2	5.20	0.06	13105

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Country	Year										
	1960	10.2	71.8	29.7	14.8	7.3	3.2	2.0	5.67	0.10	14270
	1965	8.6	71.1	30.3	16.5	8.5	3.8	2.2	5.94	0.12	15553
	1970	7.0	69.2	30.8	19.4	10.1	4.4	2.5	6.31	0.14	16924
	1975	5.9	65.9	32.7	21.7	12.0	6.6	3.6	6.85	0.20	18437
	1980	4.9	62.0	32.6	25.7	15.9	7.4	3.4	7.30	0.22	19520
	1985	5.0	57.0	34.4	27.8	17.1	10.2	5.0	7.85	0.30	20911
	1990	4.8	51.3	33.0	30.7	19.4	13.2	5.8	8.37	0.38	22566
	1995	4.0	48.4	34.4	36.7	23.2	10.9	4.3	8.64	0.30	24666
	2000	3.5	46.5	34.1	41.3	24.5	8.7	3.1	8.73	0.24	26565
	2005	0.9	38.9	33.1	49.9	28.9	10.4	3.1	9.38	0.27	28509
	2010	0.9	39.2	31.9	48.7	31.1	11.2	2.9	9.51	0.28	30538
Brazil	1950	62.8	31.7	14.4	4.8	3.2	0.7	0.4	2.08	0.02	31543
	1955	57.6	35.4	15.6	6.1	3.7	0.9	0.6	2.29	0.03	36440
	1960	52.0	39.1	17.0	7.6	4.2	1.2	0.8	2.55	0.04	41263
	1965	45.5	43.2	18.4	9.8	4.5	1.5	1.0	2.85	0.05	47487
	1970	37.8	47.1	20.6	13.3	4.8	1.7	1.2	3.29	0.06	55315
	1975	27.0	61.5	5.1	7.7	2.9	3.8	2.3	2.90	0.12	64538
	1980	27.4	59.0	6.2	9.3	3.6	4.3	2.8	3.04	0.14	75298
	1985	25.2	57.8	22.3	12.4	5.0	4.7	2.7	3.94	0.15	85749
	1990	22.3	57.0	29.7	15.6	6.7	5.2	3.0	4.69	0.16	96664
	1995	19.5	52.9	31.8	22.0	10.4	5.7	3.7	5.58	0.19	108886
	2000	16.0	45.0	28.9	32.6	16.6	6.4	3.7	6.52	0.20	122354
	2005	12.4	39.7	26.8	41.3	23.0	6.3	3.7	7.29	0.20	134481
	2010	9.6	35.6	25.6	45.5	26.4	9.4	5.6	7.89	0.30	145288
Mexico	1950	45.4	49.0	10.6	4.3	1.5	1.3	0.9	2.19	0.04	16094
	1955	42.7	50.8	11.6	5.1	1.6	1.3	0.9	2.34	0.04	17911
	1960	40.1	52.2	12.0	6.5	1.9	1.3	0.9	2.52	0.04	20318
	1965	36.1	53.8	13.9	8.3	3.5	1.8	1.2	2.96	0.06	23293
	1970	31.8	55.8	16.8	10.1	4.1	2.2	1.6	3.39	0.07	27063
	1975	30.3	51.1	17.4	14.4	5.8	4.2	2.4	4.09	0.13	31594
	1980	27.5	46.5	18.9	20.4	8.1	5.6	3.4	4.90	0.18	37041
	1985	21.4	44.4	19.4	27.6	11.0	6.6	3.6	5.77	0.20	43477
	1990	16.6	42.0	19.3	34.2	13.4	7.2	3.9	6.47	0.22	51246
	1995	12.9	39.5	20.2	38.4	15.7	9.3	5.1	7.20	0.29	59036
	2000	10.3	37.5	19.1	41.2	16.6	11.0	6.8	7.66	0.36	66378
	2005	7.8	31.7	16.5	46.3	19.8	14.2	8.4	8.45	0.45	73868
	2010	7.2	28.9	16.1	47.3	19.4	16.6	9.8	8.79	0.53	81611
Saudi Arabia	1950	64.0	25.8	10.8	6.9	2.9	3.3	1.8	2.31	0.10	1856
	1955	62.2	26.5	12.0	7.6	3.5	3.7	2.0	2.51	0.12	2061
	1960	60.5	26.8	12.7	8.4	4.1	4.2	2.3	2.71	0.13	2309
	1965	55.4	30.2	14.4	9.8	4.8	4.5	2.4	3.05	0.14	2683
	1970	54.2	29.7	14.1	11.2	5.5	4.9	2.6	3.22	0.15	3188
	1975	50.1	29.6	14.8	14.2	6.9	6.1	3.1	3.73	0.18	4041
	1980	45.7	29.5	15.0	17.6	8.6	7.3	3.7	4.26	0.22	5348
	1985	36.0	33.0	17.4	22.3	10.9	8.8	4.7	5.17	0.27	7421
	1990	29.1	34.9	18.7	26.0	12.8	10.0	5.5	5.84	0.31	9557
	1995	26.5	32.0	17.4	30.4	15.0	11.1	6.2	6.34	0.34	10959
	2000	21.2	30.4	17.2	36.0	18.1	12.4	6.9	7.08	0.39	12982
	2005	17.1	27.3	16.1	43.9	22.4	11.7	6.5	7.69	0.36	15413
	2010	12.7	23.1	15.0	52.3	29.1	12.0	6.7	8.53	0.37	18076
India	1950	74.9	22.4	6.7	2.1	0.3	0.6	0.4	0.99	0.02	218405
	1955	73.5	23.6	7.3	2.3	0.3	0.7	0.4	1.06	0.02	240942
	1960	72.1	24.8	8.6	2.5	0.2	0.6	0.3	1.13	0.02	266423
	1965	70.8	24.4	9.4	3.9	0.3	0.9	0.5	1.30	0.03	295056
	1970	66.2	27.1	12.7	5.6	0.3	1.1	0.6	1.61	0.03	330552
	1975	65.9	20.4	11.3	11.9	0.4	1.8	1.0	2.01	0.06	373640
	1980	66.3	12.7	7.4	18.7	0.5	2.3	1.2	2.34	0.07	423306
	1985	58.5	16.7	11.1	21.6	0.6	3.2	1.7	2.89	0.10	478056
	1990	51.6	18.7	13.7	25.7	0.6	4.0	2.2	3.45	0.12	538715
	1995	47.8	18.4	14.5	27.9	6.9	6.0	3.4	4.12	0.19	600511
	2000	44.0	16.2	13.5	32.8	19.8	7.1	4.0	5.03	0.22	672684
	2005	38.0	17.5	15.2	36.9	21.8	7.7	4.4	5.63	0.24	749620
	2010	33.2	16.8	15.2	41.5	25.0	8.5	4.9	6.24	0.27	829075
South Africa	1950	50.6	24.1	15.4	22.8	4.9	2.6	0.3	4.03	0.06	8403
	1955	47.6	24.7	15.7	24.9	5.3	2.8	0.3	4.32	0.06	9249
	1960	46.1	26.1	16.2	25.0	5.4	2.8	0.3	4.39	0.06	10273
	1965	42.1	28.3	9.9	26.5	5.8	3.2	0.3	4.45	0.07	11522
	1970	37.8	31.1	7.2	28.1	6.7	3.1	0.3	4.61	0.07	13035
	1975	32.1	38.0	10.8	27.8	7.6	2.1	0.2	4.83	0.05	14934
	1980	26.3	44.1	13.2	28.5	9.3	1.2	0.2	5.11	0.03	17085
	1985	19.1	50.2	6.8	29.0	4.8	1.7	0.2	5.11	0.04	19781
	1990	11.2	46.5	18.7	37.1	11.1	5.2	0.4	6.81	0.11	22633
	1995	5.2	40.5	21.2	47.4	26.3	6.9	0.5	8.29	0.15	26948
	2000	15.5	23.3	7.3	54.0	18.5	7.2	0.5	7.68	0.15	30319
	2005	10.4	20.1	7.1	63.3	31.0	6.3	0.4	8.65	0.13	31969
	2010	5.7	17.5	6.2	72.3	53.9	4.6	0.3	9.69	0.10	32760

A.2. Education Attainment for Population Aged 25 and Over

Educational Attainment for Total Population, 1950-2010										
			Highest level attained						Barro R. & J.W. Lee v. 2.1, Feb. 2016	
Country	Year	No Schooling	Primary		Secondary		Tertiary		Avg. Years of Total Schooling	Avg. Years of Tertiary Schooling	Population (1000s)
			Total	Completed	Total	Completed	Total	Completed			
			(% of population aged 25 and over)								
Australia	1950	1.3	48.4	31.9	39.8	18.8	10.5	6.9	7.87	0.35	4837
	1955	1.2	44.9	27.4	42.7	21.5	11.3	7.3	8.05	0.37	5327
	1960	1.1	40.9	22.7	45.9	24.5	12.1	7.9	8.26	0.40	5742
	1965	1.0	37.1	20.0	48.9	27.8	13.0	8.5	8.53	0.43	6242
	1970	0.9	29.3	15.4	48.3	29.5	21.5	14.1	9.35	0.71	6834
	1975	1.0	16.4	8.4	63.3	41.7	19.3	12.6	10.04	0.64	7494
	1980	1.0	7.8	4.1	70.5	49.9	20.7	13.5	10.79	0.68	8382
	1985	1.2	7.8	3.9	67.8	50.9	23.1	14.9	11.02	0.76	9297
	1990	1.3	8.4	4.2	65.7	52.0	24.6	16.0	11.20	0.81	10445
	1995	1.4	9.6	5.0	63.1	52.2	26.0	16.9	11.31	0.86	11351
	2000	1.2	10.0	5.4	64.4	55.0	24.4	15.9	11.26	0.81	12409
	2005	1.1	9.1	5.3	60.3	53.0	29.5	19.5	11.54	0.98	13384
	2010	0.8	6.5	4.0	54.7	35.4	38.0	25.2	11.77	1.26	14424
Canada	1950	2.4	52.6	25.2	36.1	15.9	8.8	5.0	7.39	0.28	7472
	1955	2.0	50.0	24.8	37.0	16.6	11.1	6.4	7.75	0.35	8420
	1960	1.7	47.2	24.1	37.9	17.5	13.1	7.7	8.06	0.42	9294
	1965	1.6	42.8	22.5	41.7	16.3	13.9	8.3	8.32	0.44	9956
	1970	1.4	38.4	20.0	44.3	16.9	15.9	9.6	8.66	0.51	11130
	1975	1.8	30.7	12.2	47.2	18.4	20.3	12.6	9.18	0.66	12547
	1980	2.0	23.7	9.5	49.4	19.8	24.9	15.7	9.84	0.81	14099
	1985	1.2	19.9	7.8	59.5	24.8	19.3	9.4	9.83	0.57	15822
	1990	1.0	15.7	6.0	62.0	27.7	21.4	11.2	10.28	0.65	17906
	1995	1.0	13.0	5.4	62.0	29.4	24.0	13.1	10.63	0.74	19341
	2000	1.0	10.6	4.0	61.4	31.0	26.9	15.6	10.98	0.85	20702
	2005	0.7	7.2	3.0	48.1	30.4	44.1	25.4	12.22	1.39	22247
	2010	0.6	5.5	2.4	46.3	31.0	47.7	27.7	12.56	1.51	23793
France	1950	0.4	88.9	37.7	9.1	2.5	1.7	1.0	4.31	0.05	25976
	1955	0.4	87.6	38.6	10.3	2.6	1.8	1.1	4.43	0.06	26838
	1960	0.3	90.1	30.8	7.5	2.8	2.1	1.4	4.10	0.07	27972
	1965	0.6	87.1	35.9	9.3	4.1	3.0	1.9	4.49	0.10	29211
	1970	0.9	82.4	37.9	12.2	5.5	4.5	2.8	4.96	0.15	29853
	1975	1.2	75.2	33.3	16.9	7.4	6.7	4.0	5.47	0.21	31622
	1980	1.1	68.1	28.8	22.3	8.3	8.5	4.6	5.96	0.26	33349
	1985	6.3	55.1	29.2	29.2	15.1	9.4	5.2	6.61	0.29	34983
	1990	9.7	41.6	25.3	36.9	20.2	11.4	6.2	7.33	0.35	36731
	1995	5.8	33.8	23.9	46.7	27.2	13.8	7.3	8.54	0.42	39018
	2000	3.1	26.4	20.6	53.4	32.9	17.1	8.8	9.53	0.52	40546
	2005	1.7	24.2	20.4	54.3	35.9	19.8	10.0	10.05	0.60	41792
	2010	1.6	19.2	17.8	54.8	37.5	24.4	12.1	10.64	0.73	43012
Germany	1950	10.3	69.9	41.8	17.1	5.0	2.8	1.9	6.71	0.09	42715
	1955	0.4	77.8	47.3	18.5	6.1	3.2	2.1	7.47	0.11	44310
	1960	0.4	77.4	47.3	19.0	7.1	3.3	2.2	7.53	0.11	45828
	1965	0.7	76.0	49.0	19.8	8.4	3.4	2.2	7.68	0.11	48618
	1970	0.8	77.1	51.8	19.0	9.1	3.1	2.0	7.71	0.10	50008
	1975	0.6	78.3	53.4	15.6	8.3	5.5	3.6	7.58	0.18	50352
	1980	0.2	75.4	52.7	17.5	10.1	6.9	4.5	7.63	0.23	51187
	1985	1.3	71.5	51.0	19.5	12.1	7.7	5.0	7.55	0.25	52402
	1990	3.3	47.8	34.8	35.9	22.9	13.1	8.5	8.77	0.43	55794
	1995	4.5	33.2	25.0	45.7	31.4	16.6	10.7	9.66	0.55	59169
	2000	5.4	21.1	16.1	53.7	38.8	19.7	12.9	10.51	0.65	60327
	2005	4.8	2.9	2.2	71.8	53.6	20.5	13.5	11.97	0.68	61065
	2010	1.8	1.6	1.3	72.3	56.9	24.3	16.1	12.69	0.81	62067
Italy	1950	16.1	73.1	41.2	9.3	3.8	1.5	1.0	4.04	0.05	26679
	1955	14.3	72.2	43.3	11.7	4.5	1.7	1.1	4.33	0.06	28327
	1960	12.5	71.4	44.4	13.9	5.2	2.1	1.4	4.61	0.07	29966
	1965	9.5	72.7	47.3	15.6	5.5	2.2	1.4	4.88	0.07	31592
	1970	7.3	72.6	48.9	17.5	6.2	2.6	1.7	5.17	0.09	32643
	1975	7.5	65.7	48.2	23.8	8.6	3.1	2.0	5.68	0.10	34128
	1980	7.7	59.0	45.9	29.2	11.2	4.1	2.7	6.19	0.14	35253
	1985	10.2	48.2	40.5	36.8	14.9	4.8	3.1	6.69	0.16	36242
	1990	9.9	40.6	36.1	43.6	18.3	6.0	3.9	7.29	0.20	38898
	1995	9.0	33.6	30.7	49.7	21.4	7.8	5.1	7.93	0.26	40718
	2000	7.9	27.6	25.6	55.1	26.1	9.4	6.1	8.58	0.31	42782
	2005	7.8	23.5	22.0	58.7	30.4	10.1	6.6	9.00	0.33	44026
	2010	6.3	19.9	18.2	61.7	33.4	12.1	8.0	9.54	0.40	44510
Japan	1950	5.7	71.7	43.5	18.2	11.0	4.5	1.8	5.91	0.13	37585
	1955	4.1	65.2	40.3	25.2	16.0	5.5	2.4	6.51	0.16	42508
	1960	2.9	59.9	37.4	30.9	20.3	6.3	3.0	6.97	0.19	47918
	1965	1.6	60.8	40.0	31.9	14.5	5.7	2.9	6.94	0.17	53289
	1970	0.9	60.6	41.4	33.0	14.0	5.5	3.0	7.08	0.17	59429
	1975	0.5	51.7	35.9	37.1	17.3	10.8	6.2	7.90	0.34	67253
	1980	0.3	45.4	32.3	39.9	27.7	14.4	9.0	8.71	0.47	73123
	1985	0.3	39.4	28.3	42.4	29.6	17.9	11.7	9.25	0.59	77682
	1990	0.3	34.2	24.9	44.5	27.0	21.1	13.8	9.61	0.70	82020
	1995	0.2	27.0	20.3	49.4	31.1	23.4	15.2	10.18	0.77	86996
	2000	0.2	21.6	16.4	51.9	35.0	26.4	17.2	10.73	0.87	92337
	2005	0.1	17.7	13.5	53.1	37.9	29.2	19.2	11.17	0.97	96046
	2010	0.1	12.7	9.7	57.0	40.2	30.1	19.9	11.52	1.00	98160

Country	Year										
Turkey	1950	83.1	11.9	6.1	4.0	2.0	1.1	0.7	0.99	0.04	8507
	1955	76.4	18.4	9.7	4.3	2.2	1.0	0.6	1.24	0.03	9908
	1960	70.8	23.6	12.6	4.6	2.4	1.0	0.7	1.49	0.03	11586
	1965	62.8	30.6	17.6	5.4	2.9	1.1	0.7	1.88	0.04	12906
	1970	61.8	30.7	19.2	6.1	3.2	1.3	0.9	2.02	0.04	14433
	1975	59.0	31.9	21.5	7.3	3.8	1.8	1.2	2.29	0.06	16166
	1980	52.4	35.3	25.5	8.7	4.7	3.6	2.4	2.87	0.12	18480
	1985	40.0	44.4	34.0	4.6	2.6	10.9	7.0	3.97	0.36	21631
	1990	33.3	47.3	38.4	8.5	4.8	10.9	7.1	4.53	0.36	25165
	1995	30.6	47.2	40.6	12.3	7.0	9.9	6.5	4.81	0.33	29092
	2000	20.1	52.7	45.8	17.4	10.2	9.6	6.3	5.54	0.32	33704
	2005	14.4	53.9	47.6	23.2	14.7	8.5	5.6	6.06	0.28	38334
	2010	11.3	52.3	46.2	25.7	17.0	10.7	7.1	6.56	0.36	43034
USA	1950	2.6	45.7	20.8	38.2	21.6	13.6	7.4	8.13	0.42	91749
	1955	2.5	41.6	19.4	41.0	24.2	14.9	8.3	8.50	0.46	98278
	1960	2.3	37.4	17.5	43.8	27.0	16.5	9.4	8.90	0.52	103461
	1965	1.9	26.5	13.6	52.7	34.5	18.7	10.9	9.82	0.59	107682
	1970	1.6	17.9	9.7	59.2	40.7	21.3	12.4	10.61	0.67	114024
	1975	1.3	10.9	6.3	60.6	44.0	27.1	16.2	11.40	0.87	123638
	1980	1.0	6.3	3.7	62.9	47.1	30.0	18.1	11.94	0.96	136033
	1985	1.1	8.3	5.1	51.8	39.7	38.8	22.4	12.14	1.22	149824
	1990	1.2	9.1	5.7	44.4	34.6	45.4	25.1	12.32	1.41	162655
	1995	0.6	3.5	2.3	49.4	35.6	46.5	24.7	12.69	1.42	173286
	2000	0.5	3.2	2.1	44.3	32.1	52.0	26.7	12.93	1.57	183747
	2005	0.5	3.0	2.0	43.4	36.1	53.1	27.9	13.13	1.62	193809
	2010	0.4	2.5	1.7	39.8	35.9	57.3	30.9	13.42	1.76	204924
United Kingdom	1950	2.3	76.6	45.9	19.5	1.7	1.6	1.1	6.11	0.05	31916
	1955	2.4	74.1	45.1	21.8	2.1	1.6	1.1	6.28	0.05	32367
	1960	2.3	71.4	43.7	24.5	2.3	1.8	1.2	6.49	0.06	32720
	1965	2.1	67.4	43.4	26.2	4.0	4.3	2.8	6.98	0.14	33287
	1970	2.0	62.4	41.8	28.2	4.8	7.5	4.9	7.54	0.25	33474
	1975	1.9	58.1	39.6	30.3	5.4	9.7	6.3	7.95	0.32	34554
	1980	2.1	54.7	38.2	33.3	6.2	9.9	6.5	8.13	0.33	35330
	1985	3.3	48.6	34.6	36.9	6.5	11.3	7.3	8.39	0.37	36043
	1990	3.1	43.1	31.3	38.7	6.6	15.1	9.9	8.88	0.50	37978
	1995	3.0	38.3	28.7	40.4	6.8	18.3	11.9	9.29	0.60	39355
	2000	3.2	31.6	24.0	41.9	6.9	23.3	15.2	9.86	0.77	40348
	2005	1.5	25.2	19.3	49.4	29.6	23.9	15.8	11.03	0.79	41142
	2010	0.2	15.9	12.2	55.6	44.3	28.3	18.8	12.32	0.94	42166
China	1950	86.8	10.3	1.7	2.7	0.6	0.2	0.1	0.65	0.01	267376
	1955	78.2	17.1	3.4	4.3	1.0	0.4	0.3	1.09	0.01	278134
	1960	69.4	24.2	5.6	5.8	1.4	0.6	0.4	1.55	0.02	296041
	1965	59.1	30.9	9.1	9.2	2.2	0.8	0.5	2.22	0.03	315190
	1970	50.8	36.3	12.4	11.9	2.9	1.0	0.7	2.77	0.03	342431
	1975	41.8	40.4	16.1	16.8	4.1	1.0	0.7	3.48	0.03	383913
	1980	33.1	44.2	18.7	21.7	5.6	1.0	0.6	4.16	0.03	449196
	1985	30.7	39.6	19.4	28.3	8.1	1.4	0.9	4.78	0.05	508243
	1990	29.3	34.3	18.0	34.4	12.1	2.0	1.3	5.34	0.07	584120
	1995	20.5	35.4	19.7	41.2	17.8	2.9	1.9	6.22	0.10	676038
	2000	13.5	34.3	19.8	48.0	21.9	4.3	2.9	7.00	0.14	759352
	2005	9.6	31.7	18.8	54.8	22.7	3.9	2.7	7.34	0.13	816727
	2010	6.6	28.1	17.0	61.8	18.7	3.6	2.4	7.53	0.12	872099
Indonesia	1950	82.9	16.1	5.3	1.0	0.3	0.1	0.0	0.74	0.00	32442
	1955	79.4	19.2	6.3	1.4	0.4	0.1	0.0	0.91	0.00	35276
	1960	75.5	22.6	7.6	1.9	0.5	0.1	0.1	1.11	0.00	39014
	1965	66.7	29.7	12.0	3.4	0.9	0.2	0.1	1.62	0.01	43458
	1970	55.3	39.1	17.0	5.1	1.5	0.5	0.3	2.26	0.02	48183
	1975	48.6	43.4	15.0	7.4	2.7	0.6	0.3	2.58	0.02	53103
	1980	41.1	48.4	16.8	9.6	4.9	0.8	0.4	3.09	0.02	59820
	1985	46.1	39.6	16.3	13.0	6.4	1.3	0.8	3.23	0.04	68799
	1990	54.5	26.4	12.3	16.8	8.5	2.3	1.5	3.28	0.08	78871
	1995	39.8	37.8	19.8	20.1	10.4	2.3	1.6	4.21	0.08	91037
	2000	27.9	51.1	29.1	18.3	9.7	2.7	1.8	4.75	0.09	103854
	2005	18.6	51.5	31.7	25.5	14.0	4.4	2.9	5.88	0.15	117391
	2010	9.5	48.2	30.6	34.8	20.3	7.5	5.0	7.26	0.25	131196
Republic of Korea	1950	33.9	59.3	49.3	5.6	3.0	1.2	1.0	3.98	0.04	7495
	1955	29.7	62.1	53.1	6.8	3.7	1.5	1.1	4.36	0.05	8584
	1960	56.9	29.6	26.2	10.9	5.8	2.6	1.9	3.12	0.09	9818
	1965	43.6	35.2	33.5	17.5	7.6	3.6	2.7	4.26	0.13	11282
	1970	34.3	38.1	36.5	21.8	9.9	5.7	4.3	5.20	0.20	12809
	1975	25.2	39.2	37.4	28.7	13.0	6.9	5.3	6.16	0.24	14462
	1980	19.7	34.5	33.0	36.9	18.7	8.9	6.6	7.09	0.31	16401
	1985	15.4	27.6	26.5	45.3	24.4	11.7	8.5	8.06	0.40	19973
	1990	11.0	21.7	20.9	51.4	30.8	16.0	11.5	9.11	0.55	23040
	1995	8.7	18.2	17.3	51.9	36.2	21.1	15.6	9.94	0.73	26171
	2000	7.5	14.8	14.0	50.9	36.7	26.8	20.8	10.59	0.95	29373
	2005	6.3	12.7	11.8	49.2	37.7	31.8	26.0	11.25	1.16	31973
	2010	4.1	11.5	10.5	44.6	34.4	39.8	34.8	11.89	1.49	34250
Russian Federation	1950	25.1	55.6	17.0	16.2	5.1	3.3	1.5	3.16	0.10	51679
	1955	12.5	61.8	19.6	21.9	6.9	3.8	1.7	3.86	0.11	59456
	1960	10.4	59.8	19.7	25.6	8.3	4.2	1.7	4.17	0.12	64687
	1965	8.6	53.1	18.5	33.2	11.5	5.2	2.2	4.77	0.15	71822
	1970	7.4	47.7	17.5	38.4	14.1	6.6	2.8	5.26	0.19	73671
	1975	8.4	39.0	15.2	42.6	18.0	10.1	4.4	5.90	0.29	77915
	1980	8.7	30.3	12.7	45.8	21.9	15.3	6.6	6.75	0.44	84003
	1985	8.4	21.6	9.6	46.9	25.4	23.1	9.8	7.76	0.66	89642
	1990	7.7	15.2	7.2	43.1	25.7	34.0	14.3	8.91	0.97	94242
	1995	5.1	11.0	5.4	43.9	24.8	40.0	15.6	9.78	1.11	95609
	2000	1.1	8.8	4.5	39.0	28.5	51.1	20.9	11.13	1.44	96420
	2005	1.0	7.0	3.7	36.5	26.7	55.5	22.9	11.41	1.57	97012
	2010	0.9	5.6	3.1	31.8	22.6	62.0	25.9	11.73	1.76	98495
Argentina	1950	15.9	75.8	28.0	7.1	3.5	1.2	1.0	4.60	0.04	8768
	1955	13.3	75.3	28.9	9.4	4.8	2.0	1.6	4.99	0.07	9874
	1960	12.0	73.4	28.8	11.6	6.1	3.0	2.3	5.32	0.11	10900
	1965	10.3	73.0	29.8	13.3	7.3	3.4	2.5	5.60	0.12	11848
	1970	8.3	72.4	30.6	15.3	8.4	4.0	2.9	5.92	0.14	12805
	1975	6.9	69.8	33.1	18.0	10.3	5.3	3.8	6.43	0.18	13954
	1980	7.1	66.4	33.0	20.4	13.8	6.1	3.7	6.72	0.20	14990
	1985	5.6	62.0	35.9	23.1	14.9	9.3	5.7	7.45	0.30	16122
	1990	5.7	56.9	34.6	25.3	16.8	12.0	6.6	7.88	0.37	17296

Country	Year										
	1995	4.9	53.3	36.4	29.1	19.8	12.6	6.2	8.34	0.38	18533
	2000	4.3	49.8	35.0	34.8	23.2	11.1	4.0	8.55	0.30	20007
	2005	1.1	42.5	35.0	42.7	26.8	13.7	4.0	9.26	0.33	21905
	2010	1.1	41.9	33.0	45.2	31.1	11.7	3.4	9.48	0.30	23710
Brazil	1950	65.3	29.8	13.9	4.0	3.0	0.9	0.7	1.96	0.03	21122
	1955	61.3	32.9	14.4	4.9	3.3	1.0	0.9	2.18	0.04	24687
	1960	56.1	36.9	15.8	5.9	3.6	1.2	1.1	2.49	0.04	28077
	1965	49.6	41.4	17.5	7.5	3.8	1.5	1.4	2.77	0.06	32264
	1970	42.5	46.0	19.4	9.6	3.7	2.0	1.7	3.09	0.07	36766
	1975	32.7	57.3	4.3	5.7	2.3	4.3	3.5	2.82	0.16	42543
	1980	32.9	55.3	4.9	6.9	2.9	5.0	3.7	2.93	0.17	49764
	1985	28.9	55.4	19.6	10.2	4.5	5.5	4.1	3.59	0.19	57977
	1990	27.7	52.1	25.7	14.4	6.7	5.8	4.3	4.04	0.20	67758
	1995	24.1	50.2	28.4	19.3	9.8	6.5	4.6	4.84	0.22	77485
	2000	20.1	47.0	28.9	25.7	14.0	7.3	5.2	5.78	0.25	87733
	2005	15.7	41.8	26.5	34.2	21.3	8.1	5.8	6.75	0.28	99139
	2010	12.4	37.0	24.8	39.3	24.6	11.3	8.0	7.66	0.39	111561
Mexico	1950	46.1	48.4	10.4	4.2	1.5	1.4	1.1	2.17	0.05	11088
	1955	46.0	48.3	10.4	4.3	1.5	1.4	1.1	2.18	0.05	12212
	1960	43.6	49.9	11.1	5.2	1.7	1.3	1.1	2.33	0.05	13701
	1965	41.1	51.5	12.1	5.7	2.4	1.7	1.4	2.54	0.06	15464
	1970	37.5	53.5	14.2	6.8	3.2	2.4	1.8	2.89	0.08	17661
	1975	36.1	51.2	15.6	9.1	3.7	3.6	2.7	3.33	0.13	20283
	1980	34.2	48.6	17.2	11.8	4.6	5.3	3.9	3.92	0.18	23688
	1985	27.6	48.4	18.7	17.5	6.9	6.6	4.9	4.80	0.23	27857
	1990	22.0	47.4	19.3	22.8	9.1	7.8	5.6	5.56	0.27	32758
	1995	17.2	44.6	20.4	28.2	12.0	10.1	7.6	6.48	0.35	38773
	2000	13.4	42.1	19.3	32.5	13.1	12.0	9.1	7.11	0.42	46203
	2005	10.2	38.0	19.0	36.9	15.4	14.9	11.2	7.89	0.52	53573
	2010	9.3	34.4	18.4	38.7	14.9	17.7	13.1	8.33	0.62	60528
Saudi Arabia	1950	67.3	22.2	8.2	7.2	3.3	3.4	2.3	2.17	0.11	1267
	1955	64.7	23.2	9.7	8.2	4.2	3.9	2.6	2.45	0.13	1398
	1960	62.2	24.0	10.7	9.2	5.1	4.5	3.0	2.72	0.15	1557
	1965	59.9	24.6	11.1	10.3	5.8	5.1	3.4	2.96	0.17	1799
	1970	57.6	25.3	11.4	11.4	6.4	5.7	3.7	3.19	0.19	2123
	1975	56.1	25.6	11.7	12.2	6.7	6.1	3.9	3.35	0.20	2675
	1980	49.8	26.9	12.6	15.6	8.6	7.7	4.9	4.02	0.25	3567
	1985	43.7	28.0	13.7	18.9	10.6	9.4	6.2	4.71	0.31	4929
	1990	35.8	29.6	14.9	23.5	13.0	11.2	7.4	5.55	0.37	6519
	1995	31.2	30.3	15.5	26.4	14.6	12.2	8.1	6.05	0.41	7812
	2000	26.3	30.4	15.8	29.7	16.4	13.6	9.1	6.64	0.46	9082
	2005	22.2	29.0	15.4	33.9	19.2	14.9	10.0	7.25	0.50	10865
	2010	18.1	27.3	15.3	40.9	24.0	13.7	9.2	7.79	0.46	12696
India	1950	77.3	19.6	5.0	2.4	0.3	0.7	0.5	0.92	0.02	149127
	1955	75.9	20.8	5.6	2.6	0.4	0.8	0.5	0.99	0.03	165769
	1960	75.5	22.1	6.2	1.9	0.3	0.6	0.4	0.94	0.02	185861
	1965	73.2	22.5	6.9	3.3	0.4	1.0	0.6	1.15	0.03	207231
	1970	72.2	22.7	7.7	3.9	0.3	1.1	0.7	1.24	0.04	230189
	1975	72.1	18.1	7.1	8.1	0.4	1.6	1.0	1.52	0.05	256651
	1980	72.5	11.3	4.9	13.7	0.4	2.5	1.6	1.87	0.08	289666
	1985	64.9	15.0	7.8	16.8	0.5	3.2	2.1	2.39	0.11	328487
	1990	57.6	18.3	11.3	19.6	0.5	4.4	3.0	2.96	0.15	373706
	1995	54.8	17.1	12.0	22.3	5.9	5.8	3.9	3.51	0.19	424889
	2000	50.8	14.6	11.2	26.8	16.8	7.8	5.3	4.41	0.26	481574
	2005	47.0	15.6	12.8	28.9	18.0	8.5	5.7	4.82	0.28	538366
	2010	42.3	15.6	13.6	33.0	20.8	9.1	6.1	5.39	0.30	604417
South Africa	1950	54.8	20.9	13.0	21.5	5.1	2.8	0.4	3.75	0.06	5880
	1955	50.7	21.7	13.3	24.5	5.8	3.1	0.4	4.15	0.07	6466
	1960	49.6	23.2	14.2	24.0	5.7	3.1	0.4	4.17	0.07	7157
	1965	45.7	24.6	8.0	26.3	6.3	3.5	0.4	4.29	0.08	7967
	1970	41.9	26.9	5.4	27.5	6.7	3.7	0.5	4.44	0.08	8803
	1975	36.9	33.1	9.2	27.5	8.3	2.5	0.3	4.66	0.06	9898
	1980	31.7	40.1	11.9	26.9	10.0	1.4	0.2	4.82	0.03	11285
	1985	24.8	46.4	4.8	26.5	5.9	2.3	0.2	4.78	0.05	13097
	1990	14.2	47.0	17.8	33.6	11.5	5.3	0.5	6.49	0.12	15130
	1995	5.5	42.5	21.1	42.7	24.6	9.3	0.8	8.22	0.20	18426
	2000	20.2	24.2	6.7	46.7	18.1	8.9	0.7	7.23	0.19	21095
	2005	13.5	22.3	7.0	56.6	30.1	7.6	0.6	8.23	0.16	22345
	2010	7.8	19.1	6.0	67.0	52.9	6.1	0.5	9.43	0.13	22855

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A.3. The Top 11 Universities For Turkey Listed By The Top 10 University Rating Institutions In The World

	University Rankings									
RANK	THE	WEBOMETRICS	SCIMAGO	US NEWS AND WORLD REPORT	QS	LEIDEN	CWUR	RUR	ARWU	URAP
1	Koç	Metu	Istanbul	Boğaziçi	Bilkent	İstanbul	Metu	Sabanci	İstanbul	İstanbul
2	Sabanci	Istanbul Technical University	Metu	Metu	Sabanci	Hacettepe	İstanbul	Metu		Metu
3	Bilkent	Bogaziçi	Istanbul Technical University	Istanbul Technical University	Koç	Ege	Hacettepe	Bilkent		Hacettepe
4	Atilim	Bilkent	Hacettepe	Bilkent	Metu	Metu	Istanbul Technical University	Istanbul Technical University		Istanbul Technical University
5	Bogaziçi	Istanbul	Bilkent	Hacettepe	Boğaziçi	Gazi	Ankara	Boğaziçi		Ege
6	Istanbul Technical University	Ankara	Gazi	Ankara	Istanbul Technical University	Istanbul Technical University	Ege	Koç		Ankara
7	Hacettepe	Hacettepe	Çanakkale 18 Mart	Koç	Ankara	Ankara	Boğaziçi	İstanbul		Gazi
8	Istanbul	Anadolu	Erciyes	Ege	Çukurova	Erciyes	Bilkent	Ankara		Boğaziçi
9	Izmir Institute Of Technology	Ege	Ankara	İstanbul	Gazi	Dokuz Eylül	Gazi	Hacettepe		Erciyes
10	Metu	Gazi	Ege	Çukurova	Hacettepe	Selçuk	Dokuz Eylül	Gazi		Bilkent
11	TOBB	Koç	Bahçeşehir	Mersin	İstanbul	Atatürk		Marmara		Dokuz Eylül

A.4. Survey Allowance and Disallowance Presidency of Universities

Sayı : 99489383-302.08.01-E.27801   16/10/2017
Konu : Bilimsel ve Eğitim Amaçlı

TOBB EKONOMİ VE TEKNOLOJİ ÜNİVERSİTESİ REKTÖRLÜĞÜNE

İlgi : Tuğçe TATOĞLUnun 10/10/2017 tarihli dilekçesi.

Üniversiteniz İktisat Bölümü Tezli Yüksek Lisans öğrencisi Tuğçe TATOĞLU'nun "Türkiye'de, Yükseköğretim Sürecinde Ortak Dereceli Öğrenciler ile En İyi Vakıf Üniversiteleri'ni Eşleştirmek İçin Özel Bir Kredi Sistemi Tasarlanması" başlıklı tezi kapsamında Üniversitemiz Mühendislik Mimarlık Fakültesi Elektrik Elektronik Mühendisliği 1. ve 4. sınıf öğrencilerine anket yapması Rektörlüğümüzce uygun görülmüştür.
Bilgilerinizi ve gereğini arz ederim.

Prof. Dr.Adnan KONUK
Rektör a.
Rektör Yardımcısı

Ek: 9 Sayfa

BU BELGE ELEKTRONİK
İMZALI ASLI İLE AYNIDIR.
...1 7 Ekim 2017...

Seyfi ÖNER
Bilgisayar İşletmeni

Bu evrak 5070 sayılı Elektronik İmza Kanunu'na göre elektronik olarak imzalanmıştır. Evrak doğrulama adresi:
https://ebysnetm.ogu.edu.tr/Home/Dogrulama/c8b5e773-8e59-4649-bc51-562101707b56

Adres	:	Meselik Kampüsü PK:26480 Odunpazarı	Ayrıntılı Bilgi	:	Murat ALTINAY - Bilgisayar İşletmeni
Telefon	:	02222393750-5107	Fax	:	(0222) 239 3767
E-Posta	:	maltinay@ogu.edu.tr	Elektronik Ağ	:	http://oidb.ogu.edu.tr/

T.C.
ANKARA YILDIRIM BEYAZIT ÜNİVERSİTESİ REKTÖRLÜĞÜ
Genel Sekreterlik

Sayı : 75265783- 8205   05.10.2017
Konu : Anket Uygulama İzin Talebi.

Sayın Tuğçe TATOĞLU
    Süleyman Demirel Üniversitesi İİBF İktisat Bölümü C-523
    Merkez/ ISPARTA

İlgi: 21.09.2017 tarihli Dilekçeniz.

    İlgi Dilekçeniz Üniversitemiz Sosyal ve Beşeri Bilimler Etik Kurul Başkanlığı' nca incelenmiş olup, Üniversitemiz İktisat Bölümü ve Elektrik Elektronik Mühendisliği Bölümü 1 sınıf ve 4. Sınıf öğrencilerine anket uygulama talebiniz uygun görülmüştür.

    Bilgilerinizi rica ederim.

                                              Suat CİHANGİR
                                              Rektör a.
                                              Genel Sekreter

Rektörlük: Esenboğa Merkez Mah. Çubuk/ANKARA
Tel: 0 312 324 15 55 / 324 15 09/ 324 15 02   **Faks:** 0 312 324 15 05   **E-Mail** : gensek@ybu.edu.tr

T.C.
ÇUKUROVA ÜNİVERSİTESİ REKTÖRLÜĞÜ
Öğrenci İşleri Daire Başkanlığı

Sayı : 27224817-044/
Konu : Anket İzni (Tuğçe TATOĞLU)

TOBB EKONOMİ VE TEKNOLOJİ ÜNİVERSİTESİ REKTÖRLÜĞÜNE
Söğütözü Cad. No: 43
Söğütözü/ANKARA

İlgi   : 04.10.2017 tarihli ve 3588-24 sayılı yazınız.

Üniversiteniz Sosyal Bilimler Enstitüsü İktisat tezli yüksek lisans öğrencisi Tuğçe TATOĞLU'nun "Türkiye'de Yüksek Öğrenim Sürecinde Orta Dereceli Öğrenciler İle En İyi Vakıf Üniversitelerini Eşleştirmek İçin Özel Bir Kredi Sistemi Tasarlanması" başlıklı çalışmasının Üniversitemiz İktisadi ve İdari Bilimler Fakültesinde eğitim-öğretimi aksatmamak koşuluyla uygulanması uygun görülmüştür.
Bilgilerinize arz ederim.

e-imzalıdır
Prof.Dr. Şeref ERDOĞAN
Rektör a.
Rektör Yardımcısı

Mevcut Elektronik İmzalar

ŞEREF ERDOĞAN (REKTÖR YARDIMCILIĞI3 - Rektör Yardımcısı) 09/11/2017 22:24

Evrakı Doğrulamak İçin : https://ebys.cu.edu.tr/Validate_Doc.aspx?V=BEL9BV8JN
Adres:Çukurova Üniversitesi Öğrenci İşleri Daire Başkanlığı 01330 Balcalı, Sarıçam /
Adana
Telefon:0 (322) 338 61 50 Faks0 (322) 338 70 22
e-Posta:ogrenci@cu.edu.tr Elektronik Ağ:www.cu.edu.tr

Bilgi için: Zeynep ŞAHİN KÖMÜRCÜ
Unvanı: Şef
Kep Adresi: cukurovauniversitesi@hs01.kep.tr

Bu belge 5070 sayılı Elektronik İmza Kanununun 5. Maddesi gereğince güvenli elektronik imza ile imzalanmıştır.

T.C.
ANADOLU ÜNİVERSİTESİ REKTÖRLÜĞÜ
Genel Sekreterlik
Yazı İşleri Müdürlüğü

Sayı : 63784619-604.01.02
Konu : Tuğçe TATOĞLU'nun Yüksek Lisans
Tezi Uygulama İzin Talebi

TOBB EKONOMİ VE TEKNOLOJİ ÜNİVERSİTESİ REKTÖRLÜĞÜNE

İlgi : 04/10/2017 tarihli ve 20169641-24-3588 sayılı yazınız.

Üniversiteniz Sosyal Bilimler Enstitüsü İktisat Tezli Yüksek Lisans Programı öğrencisi Tuğçe TATOĞLU'nun "Türkiye'de, Yüksek Öğrenim Sürecinde Orta Dereceli Öğrenciler ile En İyi Vakıf Üniversiteleri'ni Eşleştirmek İçin Özel Bir Kredi Sistemi Tasarlanması (Designing a Creditt System to Match Mediocre Students with Best Foundation Universities)" başlıklı yüksek lisans tez çalışması, Üniversitemiz Sosyal ve Beşerî Bilimler Bilimsel Araştırma ve Yayın Etiği Kurulu tarafından incelenmiş olup, etik açıdan uygun bulunmamıştır.
Bilgilerinize arz ederim.

e-imzalıdır
Prof. Dr. Aydın AYBAR
Rektör a.
Rektör Yardımcısı

A.5. SURVEY FORM

Bu anket, TOBB Ekonomi ve Teknoloji Üniversitesi'nde yürütülen, öğrencilerin üniversite seçimi ile ilgili çalışmaları devam eden bir yüksek lisans tezinde kullanılmak üzere hazırlanmıştır. Vermiş olduğunuz bilgiler gizli kalacaktır. Çalışmaya katkınızdan dolayı teşekkür ederiz. Anket ile merak ettiğiniz hususlarda ttatoglu@etu.edu.tr adresinden bilgi alabilirsiniz.

Tuğçe TATOĞLU, İktisat Bölümü Araştırma Görevlisi

A. ÜNİVERSİTE SEÇİMİ

1. Üniversite tercihi yaparken sıralamanızı belirleyen temel kriterleri 1'den 5'e kadar notlandırınız**. (Her kriter için yalnızca bir seçenek işaretleyiniz.)**

	1 Tamamen önemsiz	2 Önemsiz	3 Orta derecede önemli	4 Önemli	5 Çok önemli
Üniversitenin bulunduğu şehir					
Mezun olduktan sonra iş bulma olanağı					
Üniversitenin fiziki özellikleri (kampüs vb.)					
Yakın arkadaşların tercihleri					
Staj olanakları					
Eğitim dili					
Akademik kadronun yeterliliği					
Üniversitenin genel imajı					
Burs olanakları					
Eğitim ücretleri					
Yurt olanakları					
Yönetim kadrosunun ilgisi					
Mezuniyet sonrası iş imkanları					
Sosyal ve kültürel etkinlikler (Topluluklar vb.)					

Diğer: _____

2. Üniversiteyi hangi şehirde okumayı tercih ederdiniz? Belirtiniz.

	Tercih ederdim	Tercih etmezdim
İstanbul		
Ankara		
İzmir		

Diğer: _____

3. Mezun olduktan sonra, ilk 5 yıl içinde, aylık ne kadar gelir elde edeceğinizi öngörüyorsunuz?

………………………… TL

Net aralık veremem ☐

4. Aşağıdaki üniversitelerin eğitim kalitesi derecelerini 1'den 5'e kadar puanlandırınız. **(Her üniversite için yalnızca bir seçeneği işaretleyiniz.)**

	1 Çok kötü	2 Kötü	3 Orta	4 İyi	5 Çok iyi	Fikrim yok
Sakarya Üniversitesi						
Çukurova Üniversitesi						
Koç Üniversitesi						
Ege Üniversitesi						
Gazi Üniversitesi						
Uludağ Üniversitesi						
Anadolu Üniversitesi						
Pamukkale Üniversitesi						
Bilkent Üniversitesi						
İstanbul Medeniyet Üniversitesi						
Marmara Üniversitesi						
Sabancı Üniversitesi						
Erciyes Üniversitesi						
Süleyman Demirel Üniversitesi						
TOBB Ek. ve Tekn. Üniversitesi						
Yıldırım Beyazıt Üniversitesi						
Eskişehir Osmangazi Üniversitesi						
Selçuk Üniversitesi						

Dünya genelinde başarılı üniversiteleri sıralayan en önemli 10 derecelendirme kuruluşunun yaptığı sıralamada, 2016 yılında, Türkiye'nin en başarılı üniversiteleri aşağıda sıralanmıştır:

1. ODTÜ
2. İSTANBUL TEKNİK ÜNİVERSİTESİ
3. İSTANBUL ÜNİVERSİTESİ
4. HACETTEPE ÜNİVERSİTESİ
5. BİLKENT ÜNİVERSİTESİ
6. ANKARA ÜNİVERSİTESİ
7. BOĞAZİÇİ ÜNİVERSİTESİ
8. GAZİ ÜNİVERSİTESİ
9. EGE ÜNİVERSİTESİ
10. KOÇ ÜNİVERSİTESİ

5. Bu sıralamada yer alan Koç Üniversitesi ve Bilkent Üniversitesi'ne %100 burslu girme imkânınız olsaydı (eğitim ücreti ödemeseydiniz) bu okullardan birinde eğitim almayı tercih eder miydiniz?

Evet ☐   Hayır ☐

5.a. Cevabınız **Hayır** ise, lütfen **nedenini** belirtiniz.

6. Bankadan öğrenim kredisi alabilme imkânınız olsaydı (borçlanabilseydiniz), şu anda eğitimini aldığınız bölümü KOÇ Üniversitesi ve BİLKENT Üniversitesi'nden herhangi birinde burssuz olarak okumayı (eğitim ücreti ödeyerek) tercih eder miydiniz? Tercihlerinizi belirterek,1'den 5'e kadar notlandırınız. *(Geri ödeme şartlarını şu şekilde düşününüz: Yıllık geliriniz belli bir gelir eşiğinin üzerinde ise geri ödemelerinize başlayacaksınız. Geliriniz arttıkça aylık taksit ödemeleriniz de yükselecektir. Faizler borçlandığınız dönem için sabittir. 2017-2018 öğretim dönemi için Bilkent ve Koç Üniversitesi'nin eğitim ücretleri, sırasıyla, yaklaşık 30.000 TL ile 60.000 TL civarındadır.)*

	1 Kesinlikle tercih etmezdim	2 Tercih etmezdim	3 Kararsızım	4 Tercih ederdim	5 Kesinlikle tercih ederdim
Koç Üniversitesi (ücretli)					
Bilkent Üniversitesi (ücretli)					

B.DEMOGRAFİK BİLGİLER

Yaşınız:

18-23: ☐

24-29: ☐

30-35: ☐

35+: ☐

Cinsiyet: Kadın ☐   Erkek ☐

Hane Geliri (Aylık):

500-1000: ☐

1001-1500: ☐

1501-2000: ☐

2001-3000: ☐

3001-4000: ☐

4001-5000: ☐

5001+   : ☐

Aileniz hangi şehirde ikamet etmektedir?

Okulunuz:

Bölümünüz:

Sınıfınız:

Üniversiteye Giriş Yılınız:

Üniversite Giriş Puanınız:

Üniversite Giriş Sıralamanız:

A.6. Demographic Distribution Results of the Sample

A.6.a General Information about the Sample

Age Distribution

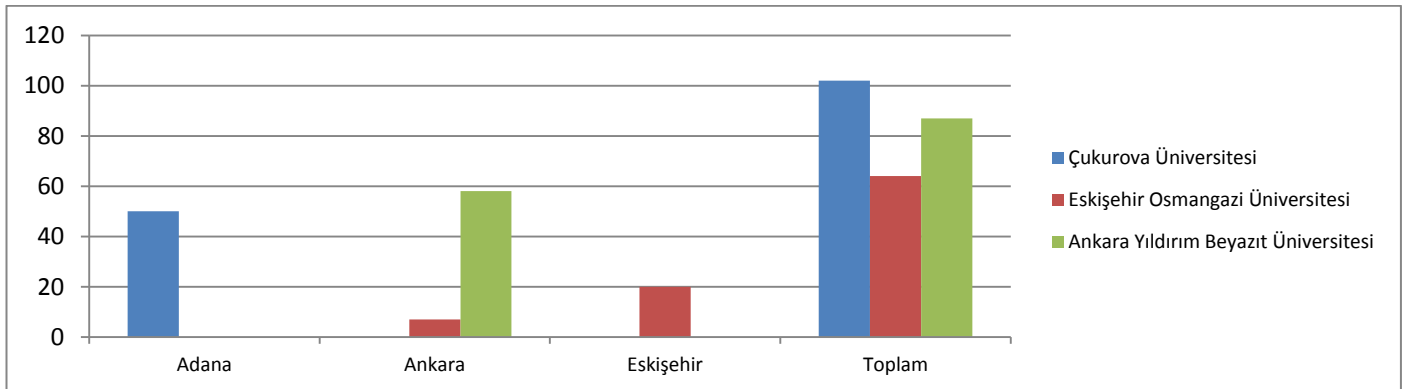| Yaş	Frequency	Percent
18-23	202	79,8
24-29	50	19,8
35+	1	0,4
Total	**253**	**100,0**

Gender Distribution

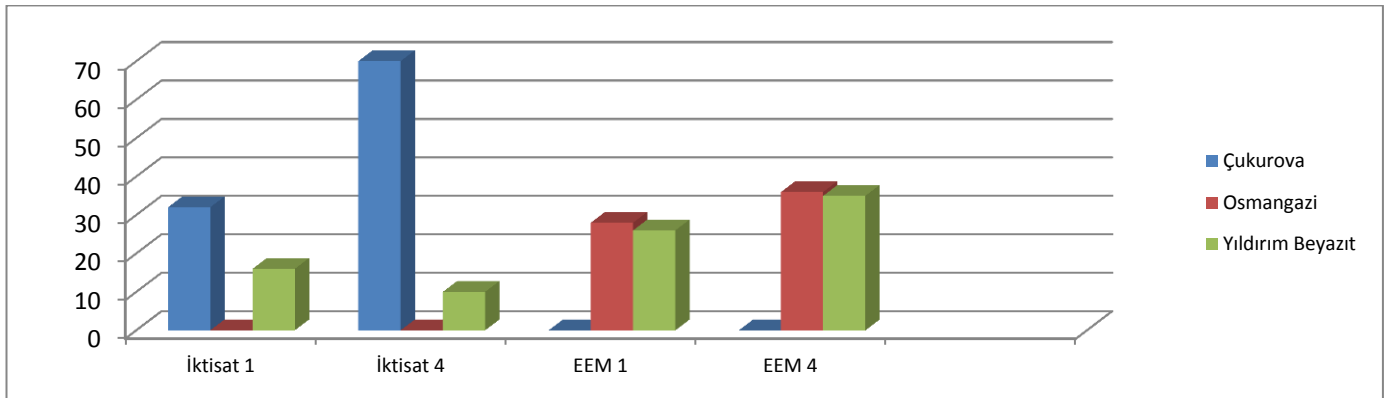| Cinsiyet	Frequency	Percent
Kadın	112	44,3
Erkek	141	55,7
Total	**253**	**100**

Monthly Household Income Distribution
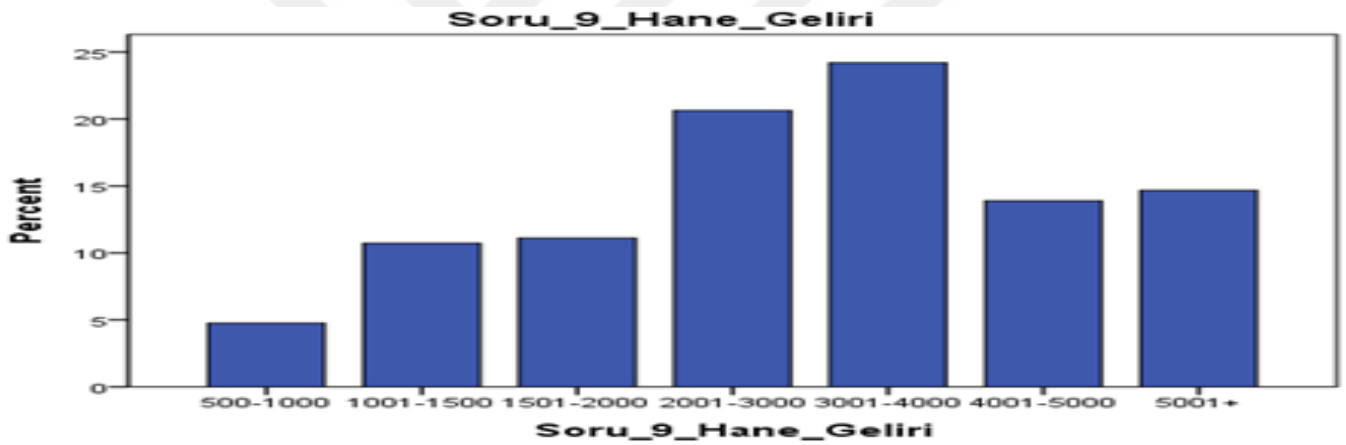
Universities where Students Take Education and Province where Students' Families Reside

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Distribution of Students Classes According To Universities and Department

A.6.b. Crosstabs Analysis

A.6.b.i. Crosstabs Concerning Receive Education via Borrowing Program

Students' Preferences at Koc University with Borrowing Program According To Gender

Koç Paid Education		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Gender	*Woman*	22,3%	17,9%	19,6%	21,4%	18,8%
	Man	34,8%	20,6%	17,7%	12,1%	14,9%
	Total	**29,2%**	**19,4%**	**18,6%**	**16,2%**	**16,6%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,599[a]	4	,107

Students' Preferences at Bilkent University with Borrowing Program According To Gender

Bilkent Paid Education		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Gender	*Woman*	25,9%	20,5%	24,1%	16,1%	13,4%
	Man	36,0%	22,3%	22,3%	10,1%	9,4%
	Total	**31,5%**	**21,5%**	**23,1%**	**12,7%**	**11,2%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,838[a]	4	,304

Students' Preferences at Koc University with Borrowing Program According To Department

		Koç Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Department	*Economics*	26,6%	20,3%	17,2%	18,0%	18,0%
	Electric-Electronics Engineering	32,0%	18,4%	20,0%	14,4%	15,2%
	Total	**29,2%**	**19,4%**	**18,6%**	**16,2%**	**16,6%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,817[a]	4	,769

Students' Preferences at Bilkent University with Borrowing Program According To Department

		Bilkent Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Department	*Economics*	31,7%	23,0%	26,2%	11,1%	7,9%
	Electric-Electronics Engineering	31,2%	20,0%	20,0%	14,4%	14,4%
	Total	**31,5%**	**21,5%**	**23,1%**	**12,7%**	**11,2%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,194[a]	4	,380

Students' Preferences at Koc University with Borrowing Program According To Classes

		Koç Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Class	*1*	25,7%	19,8%	20,8%	13,9%	19,8%
	4	31,8%	19,2%	17,2%	17,2%	14,6%
	Total	**29,4%**	**19,4%**	**18,7%**	**15,9%**	**16,7%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,603[a]	4	,626

Students' Preferences at Bilkent University with Borrowing Program According To Classes

		Bilkent Paid Education				
		Definitely I'd not prefer	I'd not prefer	I cannot decide	I'd prefer	I'd definitely prefer
Class	*1*	28,7%	20,8%	23,8%	13,9%	12,9%
	4	33,3%	22,0%	22,7%	12,0%	10,0%
	Total	**31,5%**	**21,5%**	**23,1%**	**12,7%**	**11,2%**

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,092[a]	4	,896

A.6.b.ii. Crosstabs Concerning Future Income Expectations

Classes and Departments in which Students Are Taken Education for Monthly Income Expectations within the First Five Years after Graduation

		Class		Department	
		1	**4**	**Economics**	***Electric-Electronics Engineering***
Future Income Expectations	*I cannot give a clear range*	48,1%	51,9%	56,4%	43,6%
	1500	0,0%	100,0%	100,0%	0,0%
	1600	0,0%	100,0%	100,0%	0,0%
	1800	0,0%	100,0%	100,0%	0,0%
	2000	0,0%	100,0%	100,0%	0,0%
	2250	0,0%	100,0%	100,0%	0,0%
	2450	0,0%	100,0%	100,0%	0,0%
	2500	34,5%	65,5%	69,0%	31,0%
	2800	0,0%	100,0%	0,0%	100,0%
	3000	33,3%	66,7%	42,9%	57,1%
	3500	33,3%	66,7%	40,7%	59,3%
	3800	100,0%	0,0%	50,0%	50,0%
	4000	38,5%	61,5%	50,0%	50,0%
	4500	28,6%	71,4%	14,3%	85,7%
	5000	40,9%	59,1%	40,9%	59,1%
	5500	66,7%	33,3%	66,7%	33,3%
	6000	55,6%	44,4%	22,2%	77,8%
	6500	0,0%	100,0%	0,0%	100,0%
	7000	50,0%	50,0%	50,0%	50,0%
	7500	100,0%	0,0%	50,0%	50,0%
	8000	0,0%	100,0%	0,0%	100,0%
	10000	75,0%	25,0%	0,0%	100,0%
	15000	100,0%	0,0%	0,0%	100,0%
	17000	100,0%	0,0%	0,0%	100,0%
	Total	**40,1%**	**59,9%**	**50,6%**	**49,4%**

Chi-Square Tests for Classes and Monthly Income Expectations within the First Five Years after Graduation

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,319[a]	23	,170

Chi-Square Tests for Departments and Monthly Income Expectations within the First Five Years after Graduation

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39,189[a]	23	,019