

THE OUTLOOK ON EDUCATION IN TURKEY

2017

MONITORING AND EVALUATION REPORT



**THE OUTLOOK ON
EDUCATION IN TURKEY 2017**
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Eğitim-Bir-Sen Publications: 83

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design&layout. Selim Aytekin

translated by. Gökhan Aydın

copy editör. Alizee Zapparoli Mansoni Bodson

printing. Semih Ofset 0312 341 40 75

Printed. 500 copies

Printing date. 1st edition. August 2018

ISBN. 978-975-6153-79-6

Eğitim-Bir-Sen General Center

Oğuzlar Neighbourhood Av. Özdemir Özok Street No:5 Balgat/ANKARA, TURKEY

Phone: +90 312 231 23 06 - Gsm: +90 533 741 40 26 - Fax: +90 312 230 65

www.ebs.org.tr - e-posta: ebs@ebs.org.tr

Please site this publication as:

Çelik, Z., Yurdakul, S., Bozgeyikli, H. & Gümüş, S. (2018). *The outlook on education in Turkey 2017: Monitoring and evaluation report.* Ankara: Eğitim-Bir-Sen Center for Strategic Research.

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Zafer elik
Serkan Yurdakul
Hasan Bozgeyikli
Sedat Gümüő

PREFACE

As a reflection of education being defined in different forms both in functional and organic terms, the philosophy of education adopted by societies and governments, the education system they established, the educational methods they implement and their expectations from the education system are considered as normal, even necessary.

As a result of its nature, as the first direct human activity that takes the human at the center and will continue to protect this mentioned feature as long as humanity continues to exist, it would not be wrong to define education as the “whole of activities which make it possible for the individual to be himself/ herself and for the human to reach the objective of being a man”. In this meaning, any activity, effort for change and development in the field of education appears as a result of a process that makes it possible to work jointly, discuss multilaterally, and make joint decisions even at the minimum level.

Providing these conditions related to the stage before the process is not sufficient on its own in terms of “carrying education to the point where it ought to be”. It is necessary to demonstrate what is done, what is not done, what is missing, what is correct and what is a mistake, the needs for change, and to make an effort towards analyzing and depicting these. It is necessary and important to plan work related to education, which is recognized as the whole of human activities towards raising, directing and changing the individual, and to implement these based on the targets. In addition to this, it is necessary to address whether the requirements of the processes planned were fulfilled and whether targets have been reached, and to demonstrate this within an objective framework.

Understanding how you have accomplished certain things and not others is included under the task definition of persons and institutions as an inevitable demand and pressure of external subjects. In this sense, both people and institutions are required to share with the public in certain periods and under certain headings their work, efforts in the field of activities carried out, audited, dealt with and authorized, the processes they have operated and the results they have acquired, and to fulfill the requirements of the responsibility to declare their assessments so as to create an accumulation and direct the future period processes. It is necessary to perform all of these with planned content and following a methodology that makes this possible, and to present the same to both internal and external addressees with a perspective that reflects the process analysis and result observations.

As a reflection of the responsibility we have undertaken as the biggest education union and civil society organization in Turkey, we act conscious of the necessity that we need to be the primary subject of the monitoring and evaluation activities of the education system. We consider that we have to work in the monitoring and evaluation of the reality of education in Turkey from different perspectives. With this perspective, we have shared with the public the *The Outlook on Education in Turkey 2016: Monitoring and Evaluation Report* in 2016, and *The Outlook on Education in Turkey 2017: Monitoring and Evaluation Report* in 2017.

With these reports, we have adopted the task of monitoring and evaluating both the national education and higher education system on an annual basis with the basic topic titles we have determined; and we have created an objective ground that creates expectations from everyone who deals with education. The fact that both of the reports that we have published have attracted the attention of the public, educators, academicians and decision-makers, confirms the correctness of our decision and increased our motivation towards further fulfilling this objective.

As Eđitim-Bir-Sen, with our *The Outlook on Education in Turkey 2017: Monitoring and Evaluation Report*, we aim to provide a data oriented analysis on the problematic areas related to the educational system, to create the grounds for discussions that will further improve the education system, and contribute to the development of policies that will accelerate and make it possible reach our targets related to quality education and self-realizing human beings. We hope that our report will contribute in creating a public administration basis that focuses on participation in decision-making processes in education, takes-social demands into account, supports data-oriented planning, and considers external voices in both determining problems and offering solutions.

I believe that the report, which we have prepared and published with a view that takes places through the glass of impartiality with objective lenses, with the understanding of contributing to the education system as an authorized subject on the basis of civil society, will be beneficial for the whole of Turkey and in particular for the education community, and be used as the first reference source in relation to the field of education.

I take this opportunity to thank our team who has demonstrated significant effort in the preparation and publishing of this report and enriched the content with academic sensitivity, and has undertaken with commitment the responsibility of civil society to contribute to this important field.

Ali Yalçın
Eđitim-Bir-Sen and Memur-Sen
Chairman

FOREWORD

In our country, the schooling rates have been rapidly increasing across all levels in recent years, the resources allocated to education have been improving, and the number of students per teacher and classroom has been decreasing. Together with these developments, the country rapidly approached OECD averages. How the resources allocated to education and this growth in quantitative Indicators affects the quality of the education system, how effectively and efficiently the system works , and how equally the services are distributed in the system , are important. Therefore, it is necessary to regularly monitor various Indicators related to the education system. Within this context, there may be elements which are problematic in the system or that sustain positive development.

Within the framework of these objectives, we have published *The Outlook on Education in Turkey 2016: Monitoring and Evaluation Report* last year. We now present to the public the "*The Outlook on Education in Turkey 2017: Monitoring and Evaluation Report* which is the second of our reports that has satisfied an important need in terms of monitoring the quantitative developments in the field of education and evaluating the qualitative results.

The report comprises five sections under the title of access to and participation in education, outputs of education, teachers, education and teaching environments and financing. Compared to the previous report, there has been some changes in the structure of this report. Some parts and Indicators were removed this year in reference to *The Outlook on Education in Turkey 2016*, parts of some Indicators were changed, and some new Indicators were added. In particular, data relating to the absenteeism of students, class repetition in secondary education and double-shift education were not analyzed in detail this year. Due to the fact that the culture of good governance, such as the stakeholder opinions in public administration and remedials of shortcomings over criticism, has not been sufficiently developed, some of our requests for data were not responded to by relevant authorities. Moreover, the structure of the report was changed and the sections *Commitment of Students* and *Outputs of Education* were combined, and the section *Up to Date Policies and Problems* was not handled as a separate section, but instead included on the basis of the topic in the *Highlights* section at the end of each part.

As a result of the fact that our requests for data were left unanswered by the public administration which is not open to criticism, no special data was used, and only the open data published by such institutions as MEB, ÖSYM, TÜİK as well as the *Education At A Glance* and TIMMS and PISA data published each year by OECD were used as a result. While analyzing each Indicator, the data was examined according to year, gender, region and province, as well as education level and education levels to the extent possible, and some data was compared with international data. The tables, figures and maps used in the report were prepared taking into account the formats used in international reports on the same subject.

In order for the education system to be monitored and evaluated more efficiently, it is highly important that the Ministry of National Education share the data related to the education system with the public and researchers to a greater degree and in a more transparent manner. The Ministry should not refrain from sharing the data and should know that the data shared will be used for improving the education system. I hope that this report contributes in developing policies towards the improvement and development of the education system, and the solution of the problems the system is facing.

I would like to thank Assoc. Prof. Zafer elik, Serkan Yurdakul, Assoc. Prof. Hasan Bozgeyikli and Assoc. Prof. Sedat Gümüő who have put significant effort into preparing our report, and Assoc. Dr. Bekir S. Gür, who has read the report and contributed with his critical insights.

Atilla Olum
Vice Chairman

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List of Acronyms and Abbreviations

US	United States
AK Party	Party Justice and Development Party
BİLSEM	Science and Art Center
CEIT	Computer Education and Instructional Technology
GDP	Gross Domestic Product
IEA	The International Association for the Evaluation of Educational Achievement
KPSS	Public Personnel Selection Examination
LYS	Bachelor Placement Examinations
MONE	Ministry of National Education
OECD	The Organisation for Economic Co-operation and Development
ÖSYM	Assessment, Selection and Placement Centre
PISA	The Programme for International Student Assessment
TEOG	Transition from Basic Education to Secondary Education
TIMSS	Trends in International Mathematics and Science Study
TÜİK	Turkish Statistical Institute
TYT	Basic Competency Test
YGS	Higher Education Transition Exam
YKS	Higher Education Examination
YÖK	Board of Higher Education

Translation of Turkish Terms

Açıköğretim	Open Education
Açıköğretim Genel Lisesi	Open Education General High School
Açıköğretim Lisesi	Open Education High Schools
Açıköğretim Meslek Lisesi	Open Education Vocational High School
Açıköğretim Ortaokul	Open Education Middle School
Anadolu Lisesi (Resmi)	Anatolian High School (Public)
Bilim Sanat Merkezi	Science and Art Center
Çok Programlı Liseler	Multiprogram High Schools
Fen Lisesi	Science High School
Genel Lise	General High School
Genel Ortaöğretim	General Secondary Education
İlköğretim	Elementary Education
İmam Hatip Lisesi	İmam Hatip High School
Kaynaştırma öğrencisi	Inclusive Education Students
Lise	High School
Lise (Resmi)	High School (Public)
Lise altı	Below High School
Lise dengi meslek okul	Vocational High School
İlkokul	Primary School
Meslek Lisesi	Vocational High School
Mesleki ve Teknik Ortaöğretim	Vocational and Technical Secondary Education
Okul Öncesi	Preschool
Ortaokul	Middle School
Ortaöğretim	Secondary Education
Özel eğitim sınıfı	Special Education Class
Özel Fen Lisesi	Private Science High School
Özel İlköğretim	Private Primary Education
Özel Lise (Yabancı Dil)	Private High School (Foreign Language)
Temel Lise	Private Basic High School

INTRODUCTION

In today's world, a key role is attached to education in the economic development and increase of wealth of countries, in the existence of a democratic and participatory society, the development of personal skills and individuals' capacities in ensuring their own wealth. In particular, reforms are made towards improving the education system for the purpose of having a more competitive economic structure in the global world, to produce products with high added value and to prevent the country from falling back in terms of economic competition. Besides, rates of participation in education and schooling periods have been rapidly increasing in developing countries. In Turkey, the schooling rate increased rapidly in recent years particularly at the preschool and secondary school levels. Moreover, Turkey's investment in education swiftly increased, reaching the OECD average. For that reason, it has become a necessity to monitor and evaluate the inputs and outputs of educational processes. The OECD has been preparing the *Education at a Glance* report for many years in the form of various Indicators and analyzing the performance of education systems in a comparative way, presenting Indicators to countries on which areas the education policies should be implemented. Since 2016, Eđitim-Bir-Sen has been carrying out the monitoring and evaluation of the Turkish educational system. With the second report prepared in this framework, the current status of the Turkish educational system has been revealed with all Indicators and analysis is provided by examining the historical process in a detailed manner based on data.

Objective and Scope

The basic purpose of this report is to examine and evaluate the historical trends and current state of the educational system in Turkey, in a comprehensive manner based on data collected over an annual period, taking into account the developments in education and making comparisons with international Indicators. In particular the report aims at monitoring and evaluating various Indicators related to the Turkish education system. The report, which comprises five main sections including access to and participation in education, outputs of education, teachers, education-teaching environments and financing, deals with different Indicators in each section and is supported with tables, figures and maps based on the data related to each Indicator.

In the *The Outlook on Education in Turkey 2016: Monitoring and Evaluation Report*, which was published last year, there were seven main parts (Eđitim-Bir-Sen, 2016). This year, the *Commitment of Students* section in *The Outlook on Education in Turkey 2016* is combined with the *Outputs of Education* and the section *Contemporary Policies and Problems* was not allotted a separate section, but discussed in the subsection *Highlights* at the end of relevant sections. As a result, *The Outlook on Education in Turkey 2017* comprises five sections. Some parts and Indicators were removed this year in reference to *The Outlook on Education in Turkey 2016*, parts of some Indicators were changed, and some new Indicators were added. In particular, due to the fact that data related to Indicators such as the absenteeism of students, class repetition in secondary education, and double-shift education, is

not shared as open data, the Indicators in question were not covered by *The Outlook on Education in Turkey 2017*. Since the Indicators mentioned provide important data in understanding the status of the education system, it is most suitable that the Ministry of National Education (MONE) transparently publishes this data.

In addition to this, a change was made in the organization of each section in *The Outlook on Education in Turkey 2017* and each part comprises relevant Indicators in accordance with its scope, those at focus which includes discussions under the light of findings obtained, recommendations that are policy related in the context of these discussions and the resource part that involves the resources of the relevant part.

The target of this report, which includes the monitoring and evaluation of the Turkish education system with a holistic approach, evaluates the effectiveness and efficiency of the policies currently being implemented; determines the possible effect of the education policies planned to be implemented presenting on the axis of data in which areas new policies should be developed and thus leads decision-makers, and provides important contributions for those who conduct research in the field of education.

Method

In a similar way to *The Outlook on Education in Turkey 2016* the report used a descriptive research methodology which is one of the quantitative research methods. The report has both cross-sectional and longitudinal character as it handles the changes that have occurred from past to present. In the data analysis, the tabling techniques are also included together with the figures and maps as a visual technique. The techniques used include particularly frequency distributions, rate and proportion statistics, percentage distributions, percentage change statistics, central trend measurements and cross table analysis techniques for comparisons between categories. Moreover, the beginning of the education year is taken as reference in order to have a standard reference point on all maps, figures and tables. To put it in more concrete words, data pertinent to the 2016-2017 educational term is shown as 2016 in figures, maps and tables. The data in which graduation rates are presented, the year 2015 expresses the status of graduation at the end of 2015-2016. The year is taken as the basis in the figures related to budget.

The path followed in the analysis of the data comprises two stages. First the data is updated in order to demonstrate the final status of the existing Indicators in the field of the topic. Suitable new Indicators are selected in relation to significant issues and it was decided which type of data would be collected on the basis of these Indicators. Following this, data related to the Indicators added is compiled so as to include the past years or collected from the reports published by and from websites of relevant organizations and institutions. In this process, data from various resources, organizations and institutions is collected and made available for analysis. In the second stage, data analysis techniques that are suitable for the assessment of these Indicators are identified and analyzed. In order to overcome the material errors that could arise in the compilation of data in preparation for analysis, it was ensured that the research team would control the analysis and

data . However, in some conditions, it is possible that ignorable differences could occur within the statistics presented in the report with the official statistics due to round-up errors. Finally, after the data is analyzed, if there is any inconsistent data in the process of analysis/interpretation by the research team, this data is reviewed again.

Primary Data Sources

As in the case of the previous report, the data used in this report has been obtained from various resources. The data in *The Outlook on Education in Turkey 2016* has been updated and the basic data resources in these updates and the Indicators added to this report, comprise the numeric information related to exams on the website of Measurement, Selection and Placement Center (ÖSYM), National Education Statistics published annually by MONE (MONE, 2017), and the official data obtained from the website of the Ministry of Finance.

Labour force statistics, education expenditure statistics, education statistics by age group and province are obtained from the relevant databases of Turkey Statistics Institution (TUIK). In addition to this, the data in the budget Presentation reports prepared by MONE in relevant years, the Program for International Student Assessment and Trends in Mathematics and Science Study (TIMSS) National Reports are used. In this report, no special data except the open data has been used. The main data source used while making international comparisons, is the *Education at a Glance* report published by OECD regularly every year (OECD, 2017).

Resources

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EXECUTIVE SUMMARY

Part A: Access to and Participating in Education

In 2016, the net schooling rates of both female and male students in the 6-9 and 10-13 age groups were above the averages of the Organization for Economic Development and Cooperation (OECD), and under the OECD average at the preschool and secondary education level. Moreover, the problem of regional inequality in preschool and secondary education has not yet been resolved. When the gender rates are analyzed, there are 93 female students for every 100 male students.

There are more than 17 million students in the national education system excluding higher education. 1 million 750 thousand of the students in the system are in open education. This number, which is quite high, demonstrates that the characteristic of the open high schools to be “warehouse” continues. The number of students in private education institutions has rapidly increased in recent years and reached a level of 1,2 million. The basic reason for the increase in recent years is the transformation of private courses into basic high schools as a result of the process of the closure of private courses and the provision of educational support now provided to private school students.

The number of new enrollments in primary school is around 1,2 million and the new enrollment in secondary education is around 1 million. When the new enrollment rates by school type in secondary education are analyzed, the number of students newly enrolled in vocational high schools after 2011 passed the number of new enrollments in general high schools.

The total number of students who received special education in different grades in 2016 was 306 thousand. A high majority of these students who receive special education are at the elementary level, and the number of students receiving special education in secondary education is less. This data demonstrates that a high percentage of students who receive special education in elementary school remain away from the system when they are at secondary education age. The number of students with special skills being educated in Science and Art Centers (BILSEM) has increased from 5 thousand to 25 thousand over the last 10 years. This increase in the number of institutions and trainees per institution is important in the sense that it demonstrates that the access of individuals with special skills to education has significantly increased in recent years.

Part B: Outputs of Education

Despite the fact that the rate of being at least a high school graduate has significantly increased in recent years, it is significantly below the OECD average. There has been a significant increase over the years in the distribution rates of individuals with at least a high school diploma, however, an important inequality still continues to exist in the graduation rates between regions. As in the case in other OECD countries, females graduate at a higher rate and in a more rapid manner compared to males in Turkey.

Despite the fact that both math and science scores have increased in 4th and 8th grade in 2015 Trends in Mathematics and Science Study (TIMSS) compared to previous research, it remained under TIMSS average. More importantly, the rate of students at the basic lower level and below in both tests in 4th and 8th grade is very high. This rate has approached 60% in the 8th grade math test. One of the important findings in TIMSS is the fact that success is significantly differentiated among regions. In both tests and in both grade levels, the difference between the most successful and least successful regions change vary from 70-90.

This data demonstrates that educational inequality between the regions persists in a significant manner in 4th and 8th grade.

In the Programme for International Student Assessment (PISA) 2015, Turkey decreased its scores by 38 in science, 28 in math and 47 in reading compared to previous years, and remained far below the average of OECD countries. Moreover, Turkey ranks around 50th among 70 countries in all three areas. Taking into account the fact that each 30 points correspond to an educational year in PISA 2015, the importance of the decrease in scores in Turkey can be better understood. It is apparent that there is inequality among regions in PISA, as in the case of TIMSS. For example, the difference between Western Marmara, which is the most successful region in math, and Central Anatolia, which is the least successful, is more than 60 points. 60 points correspond to a difference of two educational years according to PISA 2015 calculations.

The difference between science high schools, which are the most successful high schools in PISA 2015, and multi-program Anatolian high schools, vocational and technical Anatolian high schools and Imam Hatip Anatolian high schools, which are the least successful ones, changes between 120 to 150 in the three areas evaluated. This demonstrates that there is a difference of 4-5 educational years between the most successful high school types and the least successful high school types. To put it more concretely, if the performance of students in science high schools is at a 10th grade level, it is at a middle school 5th grade level in multi-program Anatolian high schools and the performance of Imam Hatip students is at a middle school 6th grade level. The existence of hierarchy between the high schools as seen in PISA is also clearly visible in the higher education transition exams. Whereas graduates of more academic schools, such as social science high schools, private science high schools, private high schools, teachers' high schools, science high schools, basic high schools and Anatolian high schools are placed in undergraduate programs; most graduates from high schools giving vocational and technical education are placed into associate programs and very few of them are placed in undergraduate programs. This difference in hierarchy between the high schools increases the pressure on the secondary education system even more.

The rate of students who participated in PISA 2015 from Turkey who demonstrated high level performance in the fields of science, reading and math, is below the OECD country averages. As opposed to this, the rate of students in Turkey, who demonstrate low success performance in all three fields, is highly above the OECD average. For example, more than half of the students in math have a performance below the basic level. The fact that students' success is low in international exams such as TIMSS and PISA is also seen in the university entrance exams. When the average net scores of the Higher Education Transition Exam (YGS) are analyzed, the net average score in 2017 math and science is around 5. When the tests in the Bachelor Placement Exam (LYS) are analyzed, it can be seen that the average net scores of students differed over time and the net averages are still low.

The number of applications to university entrance exam reached 2,3 million in 2017. Around one third of those who apply to the exam comprises of people who were previously placed in a university and who graduated from there. Around one third of the exam applicants have been placed into a program, and the program placement rate has decreased significantly in 2017. This situation demonstrates that the gap between supply and demand in higher education is quite high. In 2017, there occurred the problem of quotas remaining empty at a significant rate in the process of placement into higher education. 211 thousand of 437 associate quotas, and 111 thousand of 474 thousand undergraduate quotas remain empty. The lack of preference indicated by candidates towards programs with low employment and the threshold of 240 thousand who applied through YÖK for engineering and teaching areas, lead to a high number of quotas remaining unfilled.

Participation of general and vocational high school graduates in the labor force and their employment rates are quite low compared to higher education graduates. The unemployment rate of general high school graduates is higher compared to vocational high school and university graduates. It can be seen that the rate of employment of higher education and high school graduates aged 25-34 is under the OECD average in Turkey, which is among the lowest countries. The labour force participation rate and employment rate of general high school graduate females are very low compared to males, and the unemployment rate is high. It can be seen that labor force participation and employment rates of both men and women who are high school equivalent vocational school graduates are higher compared to labor force participation rates of general high school graduates, but that the unemployment rates are relatively lower. Labour force participation, employment and unemployment rates of high school graduates differentiate by region and by gender in different regions. The economic development levels of different regions, differences in socio-cultural structures and the difference in employment opportunities between regions affect labor force markets.

PART C: Teachers

A total of more than 1 million teachers have been working in public and private schools in Turkey. Around 110 thousand teachers are working in private education institutions. One third of the teachers work at the secondary education level, and the remaining work at preschool and elementary school institutions. As the grades increase from preschool to high school, the gender rate decreases in favor of males. Despite the increase in the female teacher rate in recent years, Turkey remains below the OECD average in all grades in terms of the rate of female teachers.

The need for teachers is around 80 thousand, and 120 thousand when we add teachers exceeding the fixed quota. With the change in the weekly course hours and the start of the pilot implementation for intensive foreign language classes in 5th grade, it is estimated that the number of teachers exceeding the fixed quota is going to increase. According to this, the real need for teachers is significantly over 120 thousand. On the other hand, the number of students in education faculties decreases, however, many people could have this certificate by means of pedagogic formation. Taking into account the education faculty students who entered the Public Staff Selection Exam (KPSS) and those in the programs that can provide a source for the pedagogic formation, it is expected that the number of “unassigned teachers” will exceed 1 million in a short period of time. This will become an important problem for both the government and the Ministry of Education in coming years.

After 2016, the contracted teaching and interview practice in the teacher assignment process began to be implemented. In this framework, more than 40 thousand contracted teachers were assigned in the last two years and more than 90% of the assignments in 2017 were made to Eastern and South Eastern Anatolia regions.

Salaries of teachers at the entry level in Turkey are below the OECD average. The difference in the salaries of senior teachers has been increasing more. An important part of teachers in Turkey are not satisfied with the salaries they receive. Moreover, the level of satisfaction increases with the increase of seniority in the profession.

Part D: Education - Teaching Environments

The number of public and private schools in all grades is around 83 thousand. The number of private schools increased rapidly in the last ten years and reached above 5 thousand. The important issue here is the increase in the number of basic high schools and private vocational high schools. With the transformation of general high schools into Anatolian high schools and the closure of Anatolian teacher high schools in 2014, the number of high schools, which was lower in the past, increased to 300, and the number of social science high schools increased to 100.

There are around 2,800 Imam Hatip middle schools and 1,400 Imam Hatip high schools. With the increase in the number of schools in the recent years, the number of classrooms also increased and in the last ten years, around 200 thousand classrooms were constructed and the number of classrooms increased to 680 thousand in total. The number of branches is 765 thousand. The difference between the number of classrooms and branches demonstrates that double-shift education is continuing at a significant rate.

As a natural result of the increase in the number of schools and new classrooms, a significant decrease has occurred in the number of students per branch and classroom. The number of students per branch in elementary schools was 23 in 2016, and this number was 18 in secondary education. The number of students per classroom was 24 in elementary education and 22 in secondary education. Taking into account the fact that the OECD average is 21 in primary schools and 23 in middle schools within the context of the average number of students per branch (OECD, 2017), it can be seen that Turkey has caught up with the OECD average in primary schools and approached the OECD average in middle schools, but is still above the OECD average. The number of students per teacher has decreased significantly in the last years and was 17 in elementary education and 12 in secondary education. The number of students per teacher differs excessively among regions and provinces.

Within the scope of transported education, 270 thousand students in primary school, 550 thousand students in middle schools and 450 students in high schools have been transported in 2016. The number of students transported in primary schools is lower compared to middle school and high school. The regions where transported education is carried out in both primary school and middle school grades are mostly located in the Eastern Black Sea, Western Black Sea, Central Eastern Anatolia and South Eastern Anatolia regions, where transported education is carried out intensely at both levels.

Part E: Financing

The public resources allocated to education in Turkey have increased significantly both in terms of the amount and on the basis of the rate of the general budget and Gross Domestic Product (GDP), and approached the OECD average. 91% of the education expenditures in OECD countries are public expenditures, and this rate is 80% in Turkey. Namely, Turkey, with a private expenditure rate of 20%, is at the top among OECD countries. This demonstrates that the education expenditures of households are higher in Turkey.

Whereas the number of students increased significantly in the last 10 years in Turkey, the expenditures per student also increased. However, it can be seen that the expenditure rates per student differed excessively among provinces. In addition to this, despite the fact that Turkey is the country with the highest increase in expenditures per student among OECD countries, it is at the bottom of OECD countries in terms of average expenditures per student. The expenditures per student in Turkey are around one third of the OECD average.

With the practice of providing education and teaching support to students who are being educated in private education institutions that started in 2014, 316 thousand students were supported. The segment that benefited from the incentives the most were private primary school students and basic high school students. Taking into account the private school prices, it does not seem to be possible that the disadvantaged segments of society could have benefited from this program.

RECOMMENDATIONS

- Both the results of international student success research such as TIMSS and PISA, and the results of national exams for transition to higher education demonstrate that a significant majority of students in Turkey lack knowledge at the basic level. Therefore, students should be provided with basic skills and opportunities for remedial.
- TIMSS and PISA data demonstrate that there is a significant inequality in educational success among different regions in Turkey. Disadvantageous regions should be prioritized in the distribution of human and physical resources in order to mitigate educational inequality among regions.
- According to PISA and YGS data, there is a significant difference of success between high schools in Turkey and there is a hierarchy among different types of institutions. Practices wherein the students are homogeneously distributed to different schools should be stopped and a system should be adopted wherein students are distributed heterogeneously among schools. In this regard, giving up the Transition from Elementary Education to Secondary Education (TEOG) for enrollment in secondary education is a positive development.
- The problem of harmony between supply and demand in higher education persists. The capacity should be used effectively in order to meet this demand.
- Taking into account the existing gap of teachers in Turkey, the policy to recruit a sufficient number of teachers every year (around 40-50 thousand) should continue to close this gap.
- Numerous problems are encountered in the process of recruiting teachers and as regards contracted teachers. Therefore, the practice of conducting interviews should be given up in the process of assigning teachers and recruiting contracted teachers. Additional economic rights and social opportunities should be provided that will encourage teachers to work in disadvantageous regions.
- It can be seen that the teacher salaries in Turkey are lower compared to other OECD countries. Therefore the teacher salaries should be improved and elevated to the OECD level. The number of students per classroom and branch has decreased, however, inequality between regions and dual education have been ongoing. In order to overcome these problems, priority should be given to disadvantageous regions and provinces in constructing new schools and classrooms.
- The number of students per teacher has significantly decreased, however, it differs among regions and provinces. Therefore, programs should be developed to encourage teachers to work in disadvantaged regions in order to ensure equality among regions and provinces.
- Turkey should continue to increase the budget that it has been allocating to education. Besides, expenditures spent per student should be increased from 3,5 thousand TL to 5 thousand TL and priority should be given to sending resources to regions where expenditure per student are lower.
- No restriction should be made on current expenditures that are vitally important for schools (consumables, cleaning, security etc.) and a higher budget should be allocated to schools on these issues.
- Preschool education should become widespread. For this, no fees should be charged, particularly to disadvantaged families.
- It should be ensured that open education high schools are no more a warehouse where unsuccessful students at mandatory education age are drifted into and they should mainly serve people outside the educational age.
- Despite the fact that the high school graduation rates have rapidly increased in recent years in Turkey, they remain far below the OECD averages. For this purpose, actions should be continued towards increasing the graduation averages.
- Measures should be taken to ensure the participation of children with special education needs in secondary education.
- The number and quality of BILSEMs which provide services for students with special skills, should be increased.

CHAPTER



ACCESS AND PARTICIPATION IN EDUCATION

INDICATOR A1	Schooling Rates
INDICATOR A2	Number of Students
INDICATOR A3	School Types
INDICATOR A4	Private Education
INDICATOR A5	Open Education
INDICATOR A6	Special Education
CHAPTER A	Highlights
CHAPTER A	Recommendations

Various indicators are used in order to understand the status and trends for a particular period of a country's educational system's development over time. The most important among these indicators are access and participation. Access to education refers to a situation where individuals having fundamentally different characteristics and needs benefit fairly and equally from the existing educational opportunities without suffering any discrimination. One of the most fundamental indicators that will be used in analyzing access to education is participation.

While access and participation rates in education may not provide sufficient information on the full extent to which the knowledge, skills, competency and attitudes required for increasing the level of wealth of societies and individuals within these societies is ensured (OECD, 2017a), They nonetheless constitute a significant grounds for creating the policies required for ensuring equality of opportunities, which is the most fundamental human right. For that reason, examining access and participation rates at all levels of educations covering the mandatory educational age is highly important in terms of examining the progression and development of the educational system itself.

This part, which deals with the indicators related to access to and participation in education, studies the developments and trends in participation in education for all education levels (preschool, elementary school, secondary school and high school) covering the mandatory educational age. In this scope, first the schooling rates have been examined according to age groups, gender, province and education levels. Subsequently, changes in the student numbers were analyzed in a comprehensive manner within the framework of various variables (education level, school type, open education and special education).

It seems to be important to define certain terms that will be frequently used in this section within the context of access and participation in education. One of these terms is the schooling rate. Schooling rates are one of the most important indicators that provide information about the access, participation or dissemination of education in a country across different education levels, in short demonstrating the extent to which the educational needs of the educational age population could be met. In the calculations of the schooling rate, firstly the education level or age group and population for which the calculation will be made and population of which age group will be used are determined. In the official statistics of the Ministry of National Education (MONE), the preschool theoretical age was defined as 3-5, for elementary school as 6-9, for middle school as 10-13, for secondary education as 14-17, and for higher education as 18-22 (MONE, 2017). Accordingly, the meanings of the terms gross and net schooling rates and net schooling rates by age group are given below.

The gross schooling rate is obtained by dividing the number of students enrolled at a certain educational level (for example secondary education) by the population of the age group that are expected to receive an education at that particular education level, then multiplying by 100. For secondary education, the gross schooling rate is calculated by dividing the number of students enrolled in the secondary education by the number of students who ought to be enrolled in secondary education. However, in calculating gross schooling rates, the result may exceed 100% due to the inclusion of students who fall outside the theoretical age group, such as those who start school prematurely or late or who repeat classes (UNESCO, 2016).

The fact that the gross schooling rate is high demonstrates that the capacity of the educational system and the participation are high. For example, the fact that the gross schooling rate in secondary education reaches 100% demonstrates that the educational system has the capacity to cover the 14-17 theoretical age population. However, this does not provide any understand or insight on how much of the age population in question has been schooled. For that reason, there is a need to calculate the net schooling rate in order to understand which part of the age population is participating in secondary education.

Net schooling rate refers to the rate of students in the theoretical age group at the relevant education level in a certain educational year, to the total population in the theoretical age group in the same educational level. For example, the net schooling rate for secondary education is calculated by dividing the number of students aged 14-17 enrolled in secondary education, by the total population of the 14-17 age group, and multiplying the result by 100.

Net schooling rates by age group are calculated by dividing the total number of students in the relevant age group, by the total population in the relevant age group, without regard to the education level to which the student pertains.

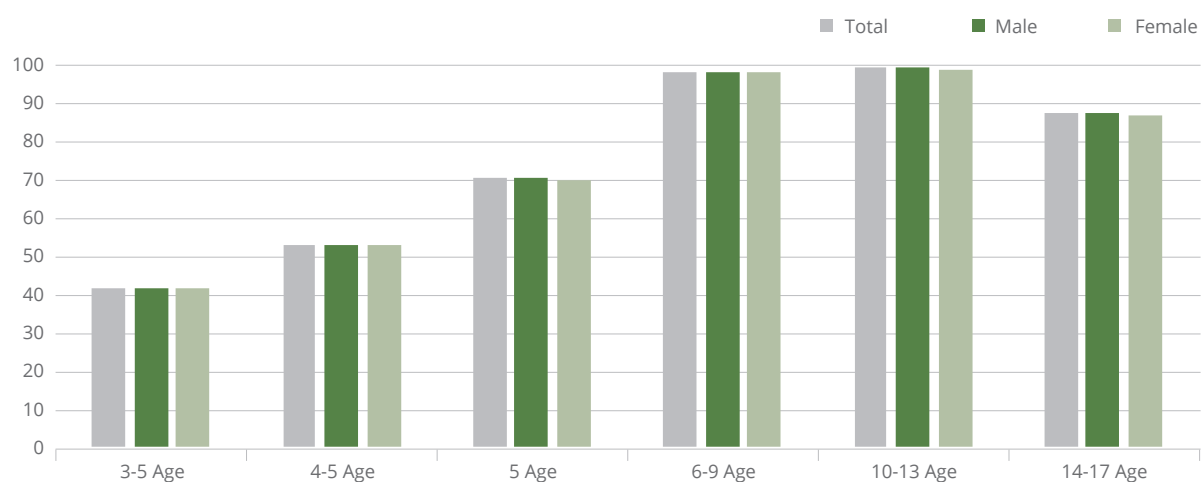
In this indicator, first the net schooling rates of different education levels in 2016 were examined by gender. Gender rate is important as it is an indicator that reflects the gender inequalities in access and participation in education. For that reason, the change in net schooling rates in different education levels between the years 2015 and 2016, was studied according to gender. Following net schooling rates according to provinces and age groups, progress over years of net and gross schooling rates calculated for each level were examined on the basis of level. Finally, since the schooling rates among provinces differ significantly particularly in terms of secondary education, the secondary education net schooling rates were taken at the provincial level and schooling rates according to age groups in some countries were also provided in order to provide a comparative perspective of Turkey's position among other countries in terms of schooling rates.

Net schooling rates by age group and gender in 2016 are given in Figure A.1.1. When the net schooling rates in Figure A.1.1 are examined, it can be seen that net schooling rate was around 99% for both male and female students in the 6-9 and 10-13 age groups.

While the net schooling rate in the 3-5 age group was around 42% for female and male students, this rate is around 53% for the 4-5 age group. In the 5 year-old group, this rate is around 70% for both genders. The net schooling rate for both girl and boy students in the 14-17 age group, which theoretically expresses secondary education, is around 87%.

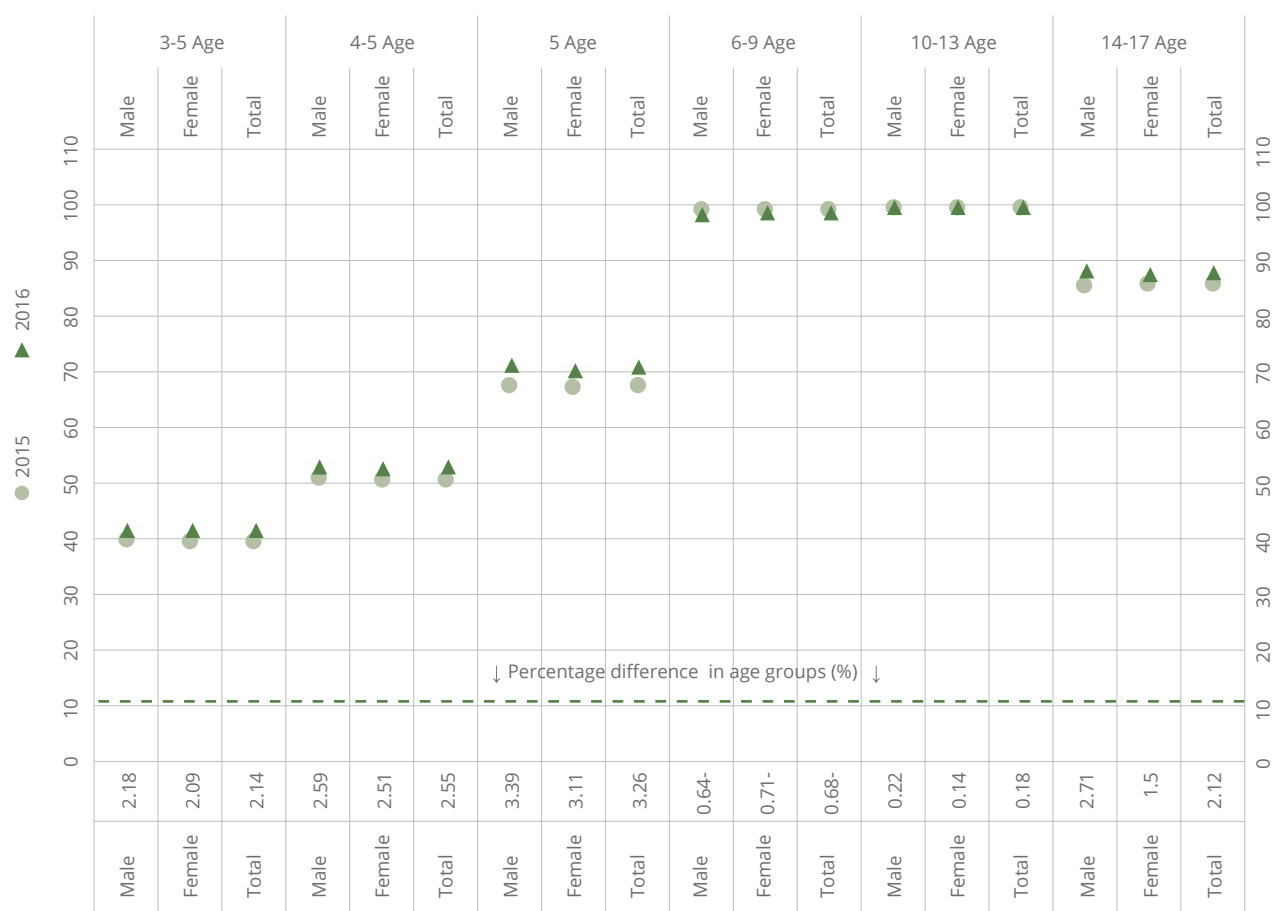
When the net schooling rates in age groups are examined in general, it can be seen that in particular the schooling rates in the 3-5, 4-5 and 5 year-old age groups which theoretically cover the preschool period, are quite low compared to other age groups. One of the basic reasons for this is that preschool education is not under the scope of mandatory education such as elementary school, middle school and secondary education. In Turkey, elementary schools and middle schools are taken under the scope of uninterrupted mandatory education of 8 years after educational term 1997/1998 with the Law dated 18.08.1997 No. 4306. With the law dated 30 March 2012 No. 6287, which is known as 4+4+4 in the public, 12-year education has been taken under mandatory scope for secondary education after the 2012-2013 educational

Figure A.1.1 Net schooling rates by age groups and gender (%) (2016)



Source: MONE (2017)

Figure A.1.2 Trends in net schooling rates by age groups and gender (%) (2015-2016)



Source: Compiled using MONE statistics published in 2016 and 2017.

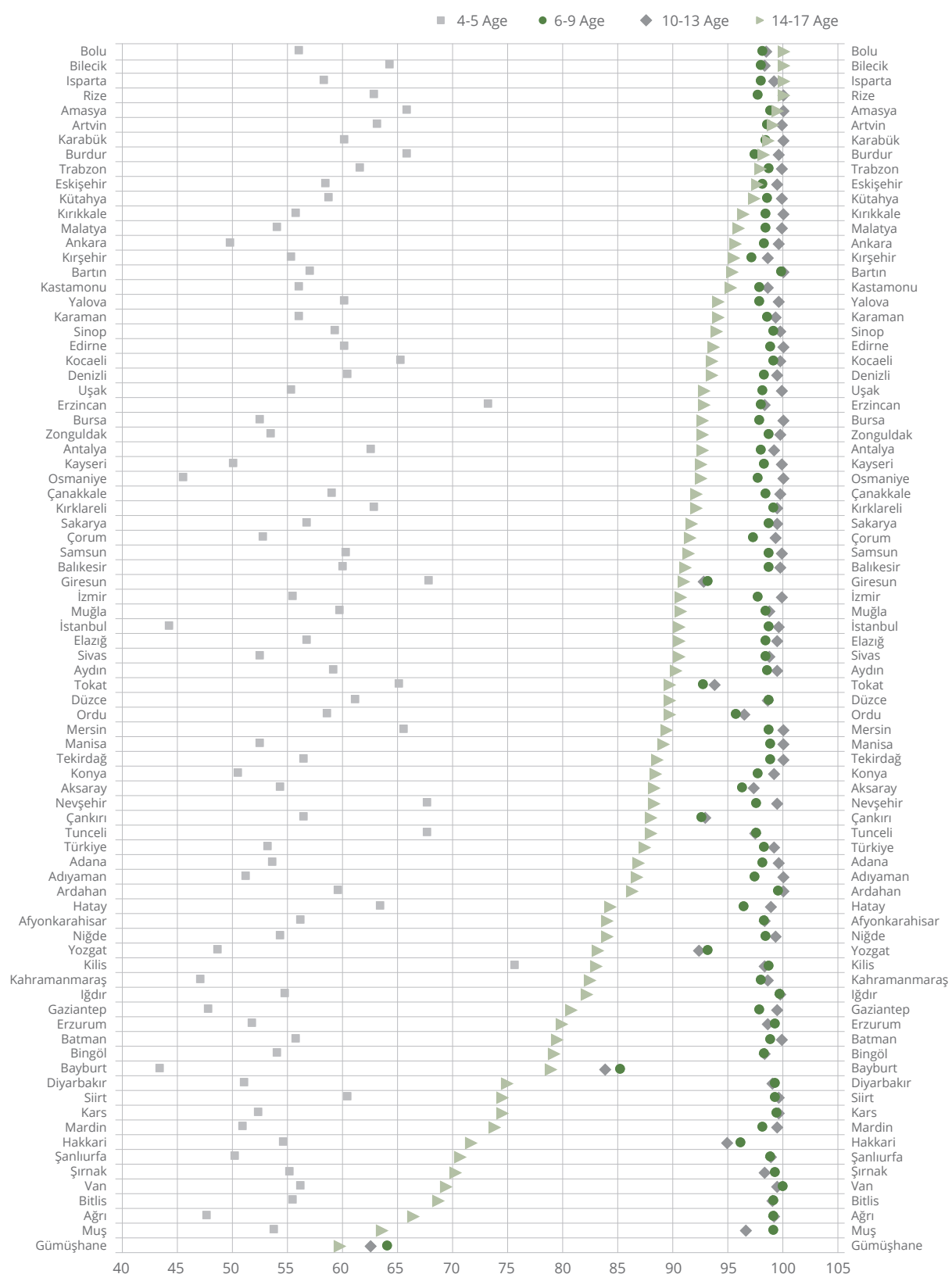
term and the elementary education period was divided into two levels, four years of primary school followed by four years of middle school. As it will be mentioned in the coming pages, there was a significant increase in the schooling rates at relevant education levels in periods when mandatory education practices were implemented.

In Figure A.1.2, net schooling rates are given for the years 2015 and 2016 by age group and gender. Since the net schooling rates by age group were first released by the Ministry of National Education (MONE) after the 2015-2016 educational term, only the data for the years 2015 and 2016 have been evaluated. According to this, it can be seen that the net schooling rates for the 2016 year in all age groups other than the 6-9 age group which theoretically covers the primary school level, increased both for male

and female students compared to the previous year. While the schooling rate for both genders in the 3-5 age group increased by 2% compared to 2015, the highest increase occurred in the 5 year-old age group with a rate of 3%. Whereas a slight decrease can be observed in the schooling rate of both female and male students in the 6-9 age group, it can be seen that the schooling rate remained unchanged in the 10-13 age group. The highest difference in schooling rates among the genders is found in the 14-17 age group. Compared to the year 2015, the schooling rate in the 14-17 age group increased by 2.7%, and the increase in the schooling rate of female students was 1.5%.

Figure A.1.3 provides the net schooling rates by province and age group. According to these figures, there are significant differences particularly in the 4-5 age group and

Figure A.1.3 Net schooling rates by province and age group (%) (2016)



Source: MONE (2017)

the 14-17 age groups' net schooling rates across Turkey by province. Upon examination of the net schooling rates in the 4-5 age group, it is clear that the schooling rate in seven provinces (Ağrı, Bayburt, Gaziantep, İstanbul, Kahramanmaraş, Osmaniye and Yozgat) is far below Turkey's national average, and other provinces have a schooling rate that is on average 50% higher and above. The province with the highest schooling rate in the 4-5 age group is Kilis.

As it can be seen from Figure A.1.3, the net schooling rates for the year 2016 in the 6-9 and 10-13 age groups were 95% and above in all provinces with the exception of six (Bayburt, Çankırı, Giresun, Gümüşhane, Tokat ve Yozgat). The net schooling rate in Bartın and Van for the 6-9 age group even reached 100%.

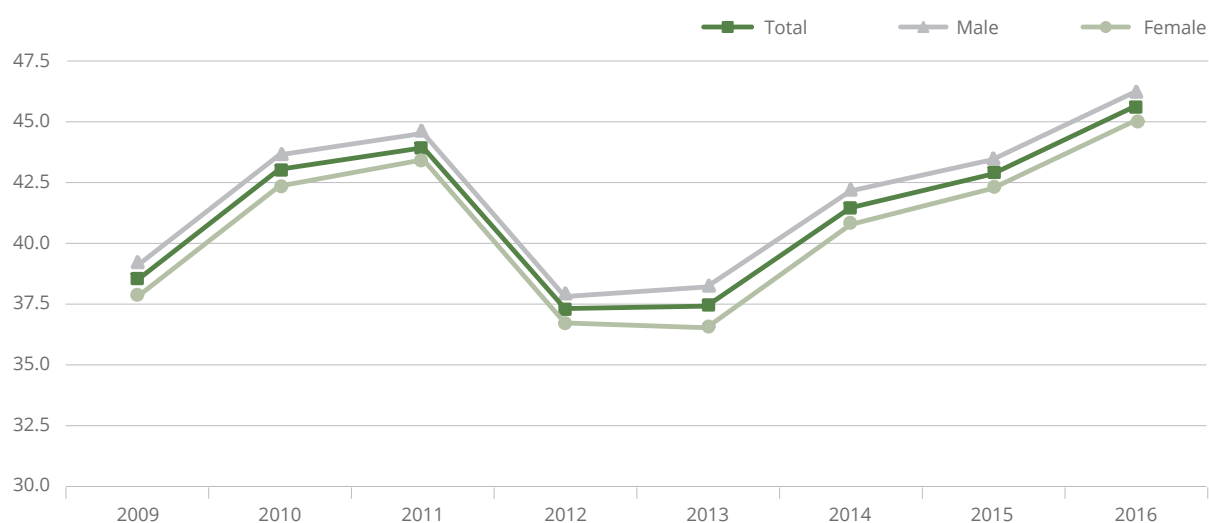
When considering the net schooling rates for age group 14-17, it can be observed that the net schooling rate in 43 provinces is above 90%. Whereas there were 29 provinces with 90% and above in 2015 in the 14-17 age group (Eğitim-Bir-Sen, 2016), the fact that this number increased to 43 in 2016 is a positive development in showing that the differences among provinces have decreased. However, there is no significant change in places where the number was below 75% in 2015, the majority of which comprised provinces in eastern regions (Muş, Ağrı, Van, Bitlis, Hakkâri,

Şanlıurfa, Mardin, Şırnak, Kars, Diyarbakır, Siirt and Gümüşhane). The fact that the net schooling rates in 2016 in the 14-17 age group are still below 75% in the provinces in question is important in terms of demonstrating that the existing barriers to participation in secondary education in these provinces persist.

Figure A.1.4 demonstrates the change in net schooling rates by gender in the 4-5 preschool age group between 2009 and 2016. According to these figures, a fluctuating trends can be observed both in regards to gender and in the total figures during the 2009-2016 period. The net schooling rate which was around 30% in 2009 reached 44% in 2011, and decreased to 37% in 2012. The net schooling rate which increased after 2014, rose to 46.2% in 2016. The reason for the sharp decline in the preschool net enrollment rate in 2012 is due to the implementation of law numbered 6287, which is known as 4 + 4 + 4 within public discourses, and the fact that 60-month-old children can now start primary schooling and that 66 months old are obliged to start primary schooling.

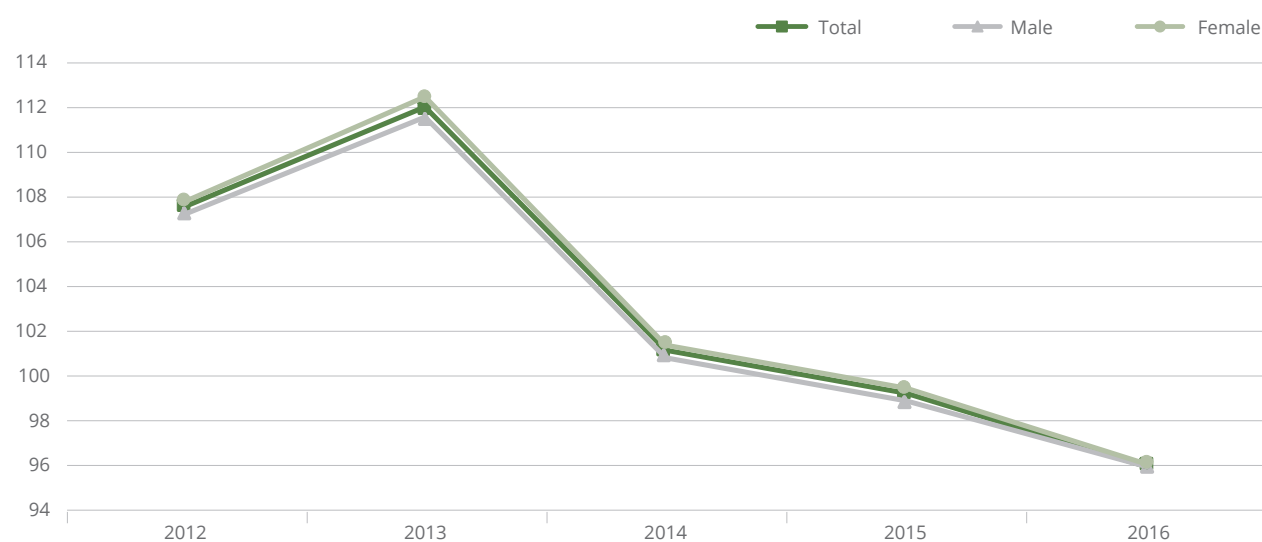
When the net schooling rates of female and males students at the preschool level are examined, it can be seen that both genders demonstrate a parallel development rate. Together with this, the preschool education participation rate for male students is slightly higher than females.

Figure A.1.4 Trends in net schooling rates in Preschool level (age 4-5) by gender (2009-2016)



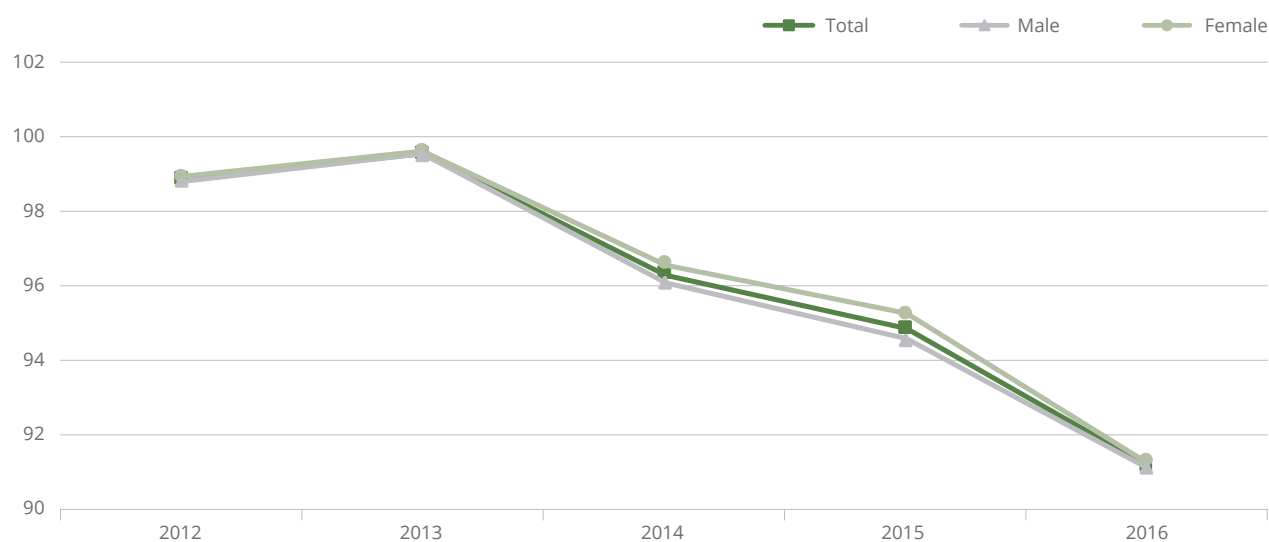
Source: Compiled using MONE statistics published in various years.

Figure A.1.5 Trends in gross schooling rates in primary school by gender (2012-2016)



Source: Compiled using MONE statistics published in various years.

Figure A.1.6 Trends in net schooling rates in primary school by gender (2012-2016)

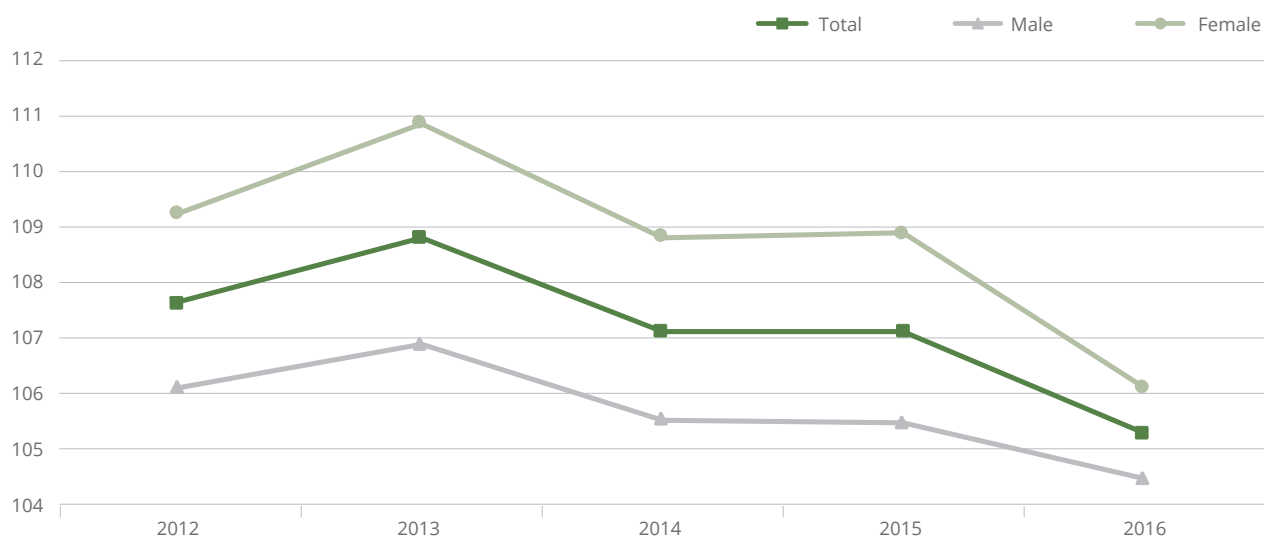


Source: Compiled using MONE statistics published in various years.

Whereas the schooling rate at the preschool education level has showed a tendency to increase over the years, it could be said that the rate remains very low taking into account the fact that the OECD average is above 95% (OECD, 2017b).

Figure A.1.5 demonstrates the gross schooling rates of female and male students in primary schools between 2012 and 2016, and Figure A.1.6 demonstrates the net schooling rates of female and male students in primary schools between 2012 and 2016.

Figure A.1.7 Trends in gross schooling rates in middle school by gender (2012-2016)



Source: Compiled using MONE statistics published in various years.

The gross schooling rates in primary school between 2012-2016 decreased to 95.9% from 107.2% for males and to 96% from 107.8% for females. According to Figure A.1.6, the net schooling rate of males decreased from 98.82% to 91%, and of females from 98.90% to 98%, between 2012-2016.

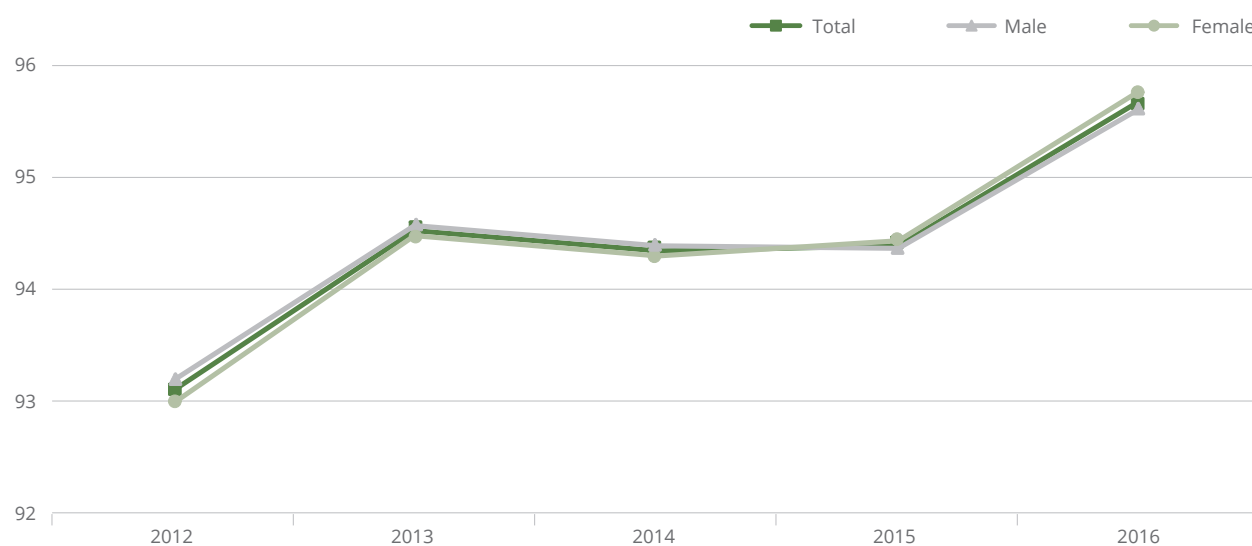
This decrease in net schooling rates arises from the fact that portion of the children in the 6-9 age group continued preschool education and another portion continued middle school, as can be seen in Figure A.1.7. This data means that a significant portion of primary school children aged 6-9 remained outside primary school. This data indicates that these children continued not to primary school but to other levels. As it can be seen in Figure A.1.1, 99% of children aged 6-9 have been schooled.

The gross schooling rate demonstrates that students in younger and older age groups outside the theoretical age group are also included as students in the system as it was expressed above. Thus, gross schooling rates could exceed 100% for such reasons as starting school early, late or having to repeat the year. On the other hand, another reason for the decrease seen in both gross and net schooling rates in 2014 and onwards is a technical change made in the calculation of schooling rates after

2014. Whereas MONE used to take into account the number of students in calculating schooling rates for the 2013-2014 educational year and previous years, it used to include all active and passive (those who go abroad, die, transition to open education etc) students enrolled in the system. However, after the 2014-2015 educational term, a separation was made between active and passive students and students who become passive in the system (those who go abroad, die or transition to open education) were not included in the number of students used in calculating the schooling rates. Since those who were deemed as passive after 2014-2015 educational term were not included in the student numbers, a decrease was seen in the schooling rates (Eğitim-Bir-Sen, 2016).

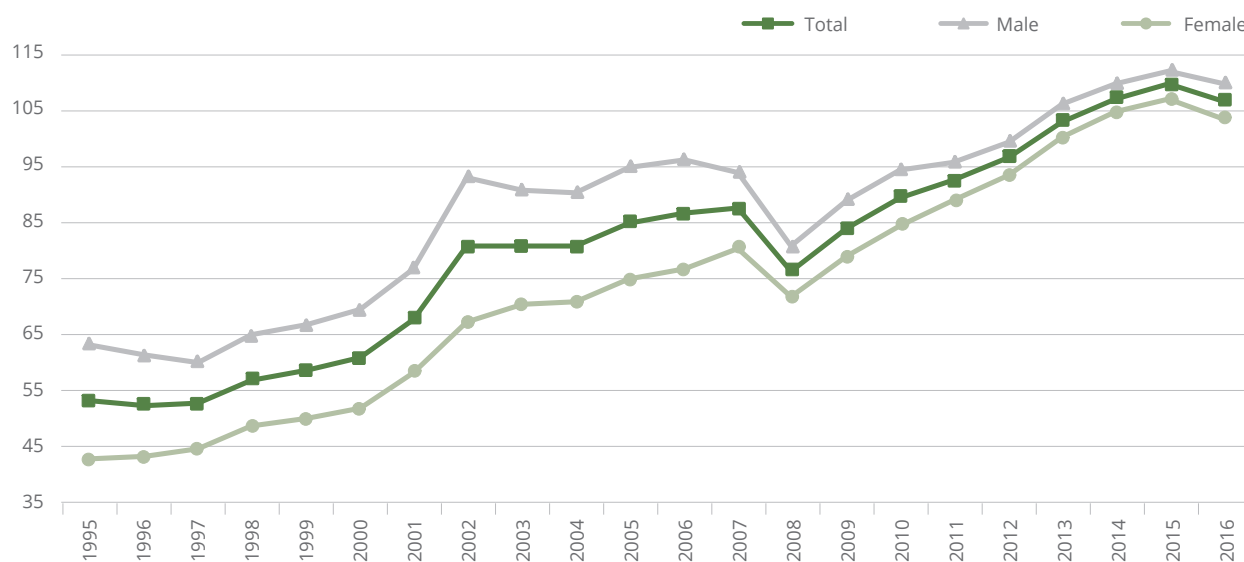
Figure A.1.7 shows the change in the gross schooling rates of female and male students in middle schools between the years 2012-2016. According to this, from 2012 to 2016, the gross schooling rate in middle school decreased from 106.1% to 104.5% for males; 109.1% to 106.1% for females; and from 107.6% to 105.3% in total. Figure A.1.8 gives the net schooling rates in middle schools according to gender between 2012 and 2016. According to this, whereas the net schooling rate in 2012 was 93.1% for males and 93% for females, this increased by 3% in 2016, reaching 95.6% for males and 95.7% for females. The total

Figure A.1.8 Trends in net schooling rates in middle school by gender (2012-2016)



Source: Compiled using MONE statistics published in various years.

Figure A.1.9 Trends in gross schooling rates in secondary education by gender (1995-2016)

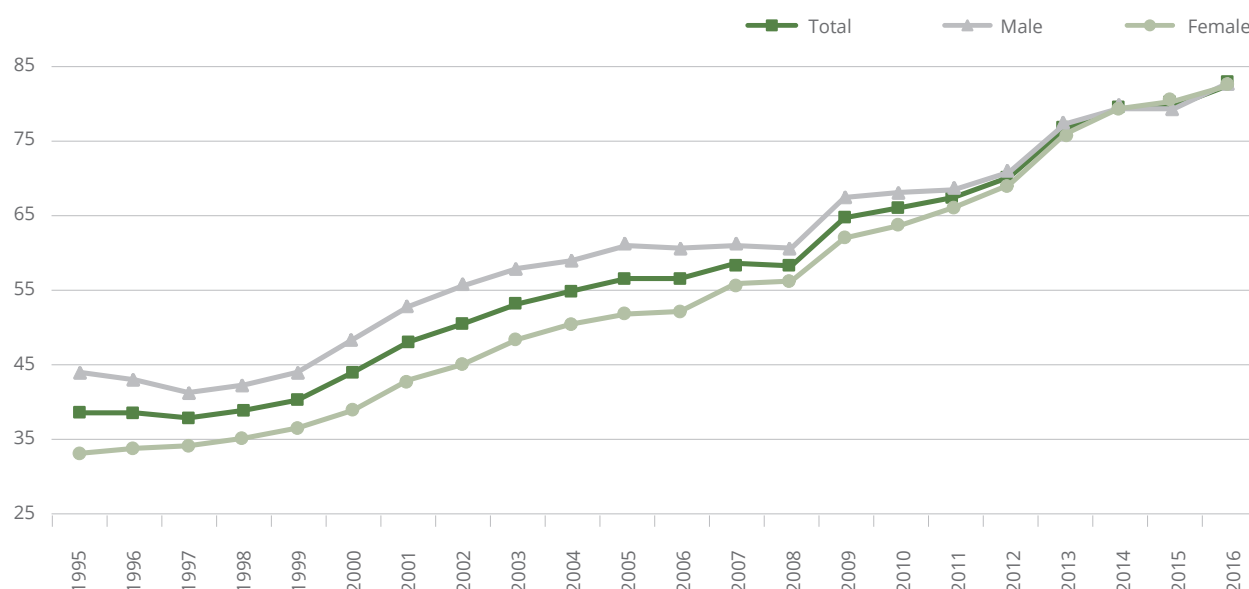


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

increased from 93.1% to 95.7%. When we look at the gross and net schooling rates in middle schools, it can be seen that the schooling rate for females is higher with a slight difference. Secondly, whereas the net schooling rate was close to 96%, the gross schooling rates were around ten

points higher than this at approximately 105%. The main reason for the high gross schooling rate, as stated before, is the significant number of children starting primary school aged 60-66 months in 2012 and 2013, and these children are not middle school children.

Figure A.1.10 Trends in net schooling rates in secondary education by gender (1995-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

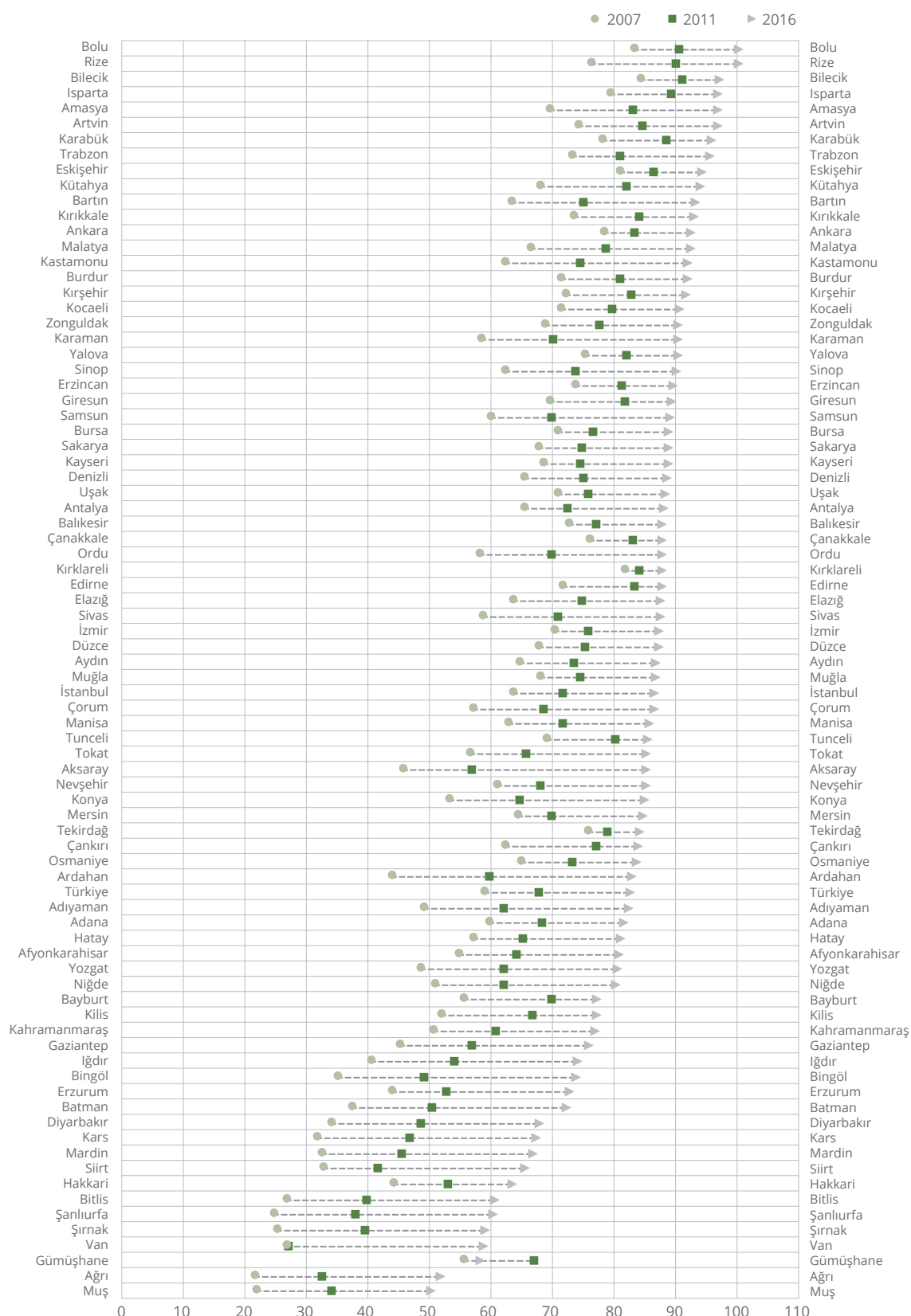
The change in the gross schooling rate in secondary education by gender between 1995 and 2016 is shown in Figure A.1.9. Accordingly, the gross schooling rate in secondary education demonstrates significant progress during the 1995-2016 period, and increased from 53.4% to 106.9% in total, and from 63.5% to 110% for males and from 42.9% to 103.7% for females. Figure A.1.8 gives the net schooling rates in middle schools by gender between 1995 and 2016. According to this, the total net schooling rate in secondary education increased from 38.7% to 44.1% in 1995 for boys, and from 33.2% to 82.4% for girls.

A significant increase has taken place in both gross and net schooling rates for both female and male students in secondary education. Whereas a regular increase was observed after 1995, the schooling rates increased more rapidly in gross and net terms as the mandatory education was increased to 12 years after 2012. In addition to this, gross schooling rates exceeded 100%. This data demonstrates that some of the students receiving a secondary education were younger than the theoretical

age group for secondary education, but also a significant number of the students are older than the theoretical age group for the secondary education level due to failure and repetition.

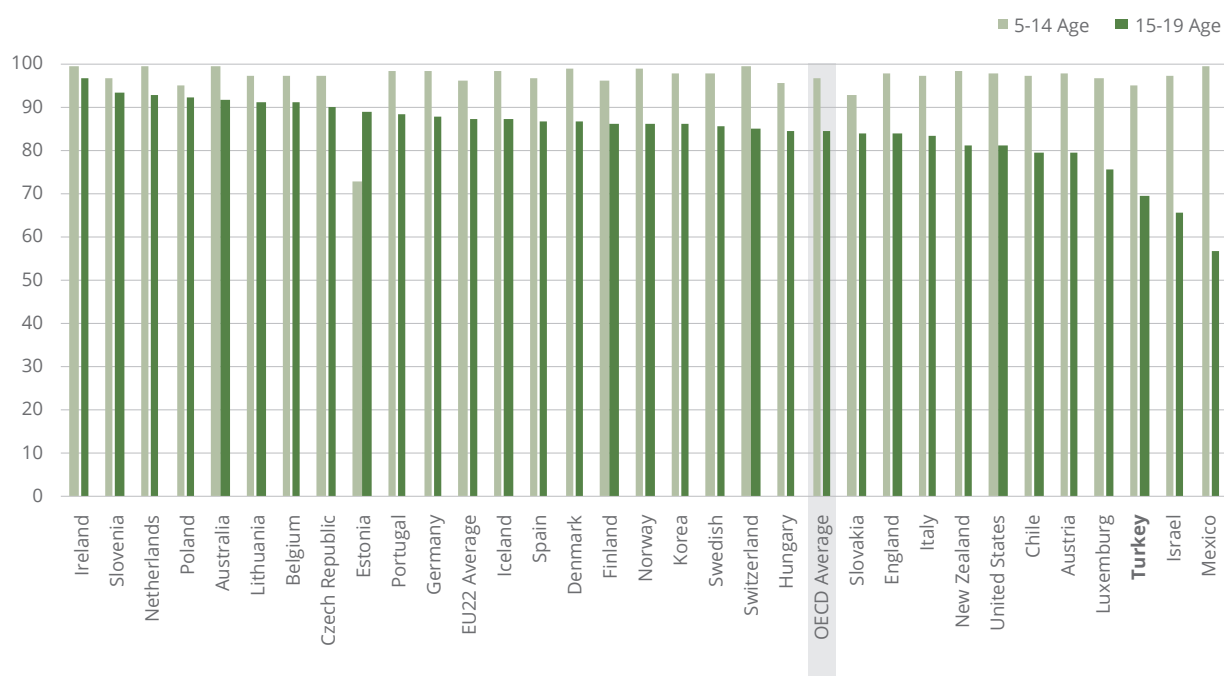
Figure A.1.11 shows the change in net schooling rates in secondary education by province in the years 2007, 2011 and 2016. Since there was no significant change in the net schooling rate compared to the previous year in primary and middle schools and there was no important difference among the provinces, data related to these levels was not provided. Since the schooling rates in secondary education increased more rapidly and there is a significant differentiation in schooling rates among provinces, the distribution of net schooling rates in secondary education by provinces was given. According to this, net schooling rates progressed significantly in secondary education in all provinces from 2007 to 2016. However, net schooling rates in secondary education among provinces has been continuing to significantly differ. In 2007, there are 34 provinces whose net schooling

Figure A.1.11 Trends in net schooling rates in secondary education by province (2007, 2011 and 2016)



Source: Compiled using MONE statistics published in various years.

Figure A.1.12 Schooling rates in OECD countries by age group (%) (2015)



Source: OECD (2017a)

Note: Countries are listed according to their schooling rate for the 15-19 age group.

rate is below 60% in secondary education, most of which are the provinces in the East and Southeastern Anatolia regions. In 2011, the number of provinces whose net schooling rate in secondary education was below 60% decreased to 17. With the developments that have taken place after secondary education was included under the scope of mandatory education, there remained only 5 provinces (Muş, Ağrı, Gümüşhane, Van and Şırnak) whose secondary education schooling rate was below 60% in 2016. This situation demonstrates that the inequalities between provinces decreased. However, there are still important differences among the provinces in terms of access to and participation in the education of children of secondary education age. Whereas there are a total of 22 provinces with secondary education schooling rates above 90%, this rate remains around 50% in Ağrı and Muş.

Schooling rates in the 5-14 and 15-19 age groups in OECD countries and in Turkey for the year 2015 are given in Figure A.1.12. The average schooling rates for the 5-14 age group in OECD countries is 97%. The schooling rate in this age group in Turkey is 1 point below the OECD average. Among the countries whose schooling rates are given for the 5-14 age group, only Slovakia (93%) and Poland (95%) are behind Turkey. The schooling rate in Finland and Hungary is 96% similar to the rate in Turkey.

There are important differences between countries in terms of schooling rates in the 15-19 age group. Turkey falls far beyond the OECD average, which is 85%, with its schooling rate of 70% in the 15-19 age group. Countries which have a lower schooling rate than Turkey include Mexico (57%) and Israel (66%).

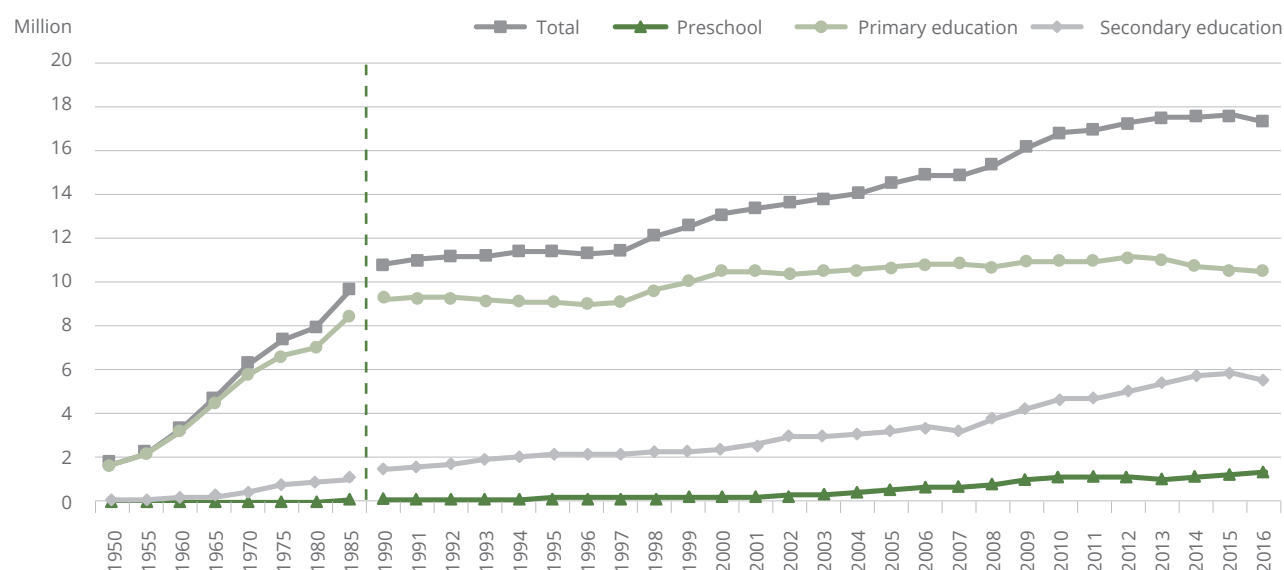
In determining the level of access and participating in education, the total number of students within the education system is a basic indicator. In this indicator, the total numbers of students per level, the number of primary and middle school students, the total number of students by gender and the gender rates, the change in the gender rates of students by level, and the change in gender rates of primary school and middle school students between 1950-2016 were examined. In addition to this, changes in the number of new student enrollments in primary education and secondary education, and in the gender rates of students who newly enrolled, were comprehensively studied.

The change in the total number of students in preschool, elementary school and secondary school between 1950 and 2016 is shown in Figure A.2.1. According to this, the total number of students generally demonstrated a continuous increase between 1950 and 2016 in all levels. The total number of students which was 10 million 789

thousand in 1990, reached 17 million 319 thousand in 2016. One of the basic reasons for the increase observed in the total number of students is the increase in the age of the population as well as the schooling rates.

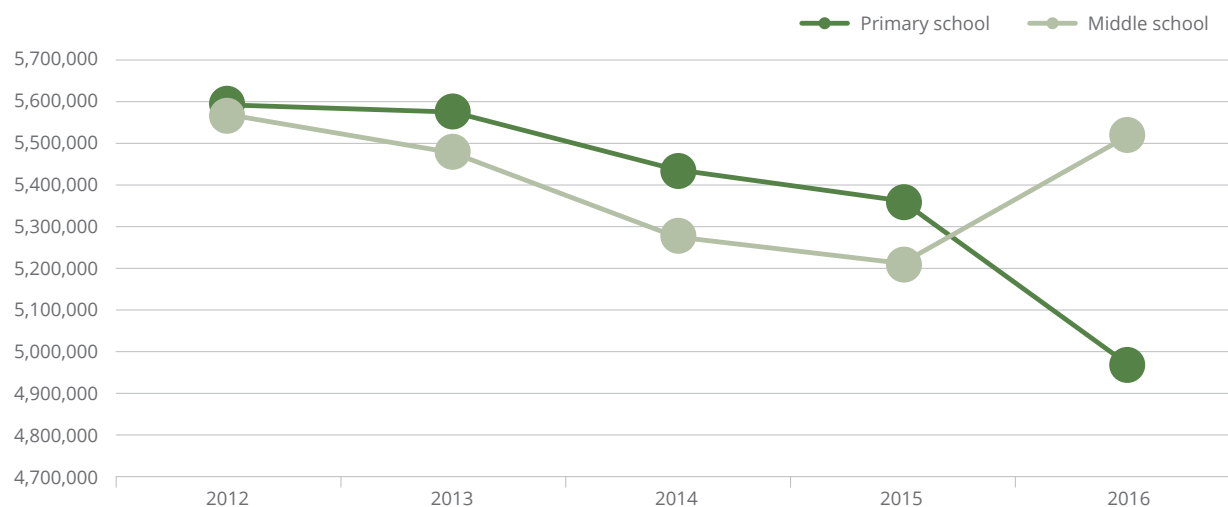
When the increase in the number of students is examined according to levels, it can be seen that the number of students in preschool education has continuously increased since the 1950s. The period in which the highest increase occurred in the number of preschool students is the period between 2002 and 2012. Depending on the change in the definition of the age population with the adoption of education Law No. 6287 which was implemented in the 2012-2013 educational year, there was an over-normal increase in the number of students who enrolled in elementary school, for that reason there was a decrease in the number of preschool students. Number of students in preschool education which demonstrated a rapid increase after 2013, increased to 1 million 315 thousand in 2016.

Figure A.2.1 Trends in total number of students by levels (1950-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure A.2.2 Trends in total number of primary and middle school students (2012-2016)



Source: Compiled using MONE statistics published in various years.

The number of students in elementary school demonstrated a slower growth compared to other education levels excluding the first years of the eight-year education decision between 1990 and 2011. With the 4+4+4 regulation that came into force in 2012, the number of students in elementary education reached its highest peaking at 11 million 160 thousand, which was followed by a decrease trend after 2013. The reason for the fall observed in the number of students after 2013 was the new opportunity to start primary school for 60-month children created by Law No. 6287 and the flexibility provided to the school enrollment of children older than 66 months (Çelik, Boz, Gümüş and Taştan, 2013). As a matter of fact, the increase observed in the number of preschool students after 2013 confirms this situation.

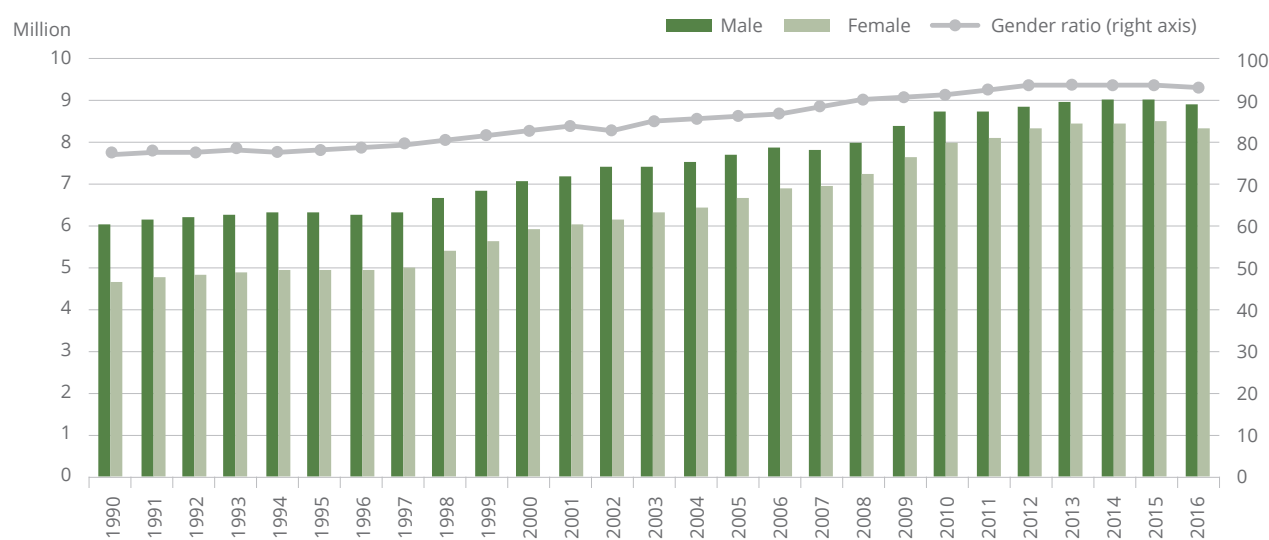
When the change seen in the number of students in secondary education is examined, it can be seen that there is an overall increase trend. The number of secondary education students, which was 1 million 426 thousand in 1990, reached 3 million 23 thousand in 2002 with an increase of 2.1 folds. The number of secondary education students generally demonstrated a continuous increase between 2003-2011. In particular, as the high schools were extended to 4 years, the number of students rapidly increased in 2008, reaching 4 million 756 thousand in 2011.

With the adoption of the 12 year mandatory education law in 2012, the number of students increased, reaching 5 million 514 thousand.

Figure A.2.2 shows the changes in the number of students in primary schools and middle schools that serve as secondary education institutions during the 2012-2016 period. According to this, a gradual decrease could be seen in the number of students both in primary schools and middle schools from 2012, which is the year the 4+4+4 practice was launched, up until 2015.

The main reason for the decrease between 2012-2015 could be explained by the decrease in the pressure of lower age groups that comes from lower education levels. As a matter of fact, according to the calculations from 2015, a decrease of 1.77% is expected in the number of primary school students in a period of 3-5 years. The most apparent difference in the total number of students in primary school and middle school occurred in 2016. Whereas the number of students enrolled in primary school in 2015 was 5 million 360 thousand, this decreased to 4 million 970 thousand in 2016 with a drop of around 390 thousand. In middle schools, there was a significant increase in 2016 compared to 2015. Whereas a total of 5 million 211 thousand students were enrolled in middle schools in 2015,

Figure A.2.3 Trends in the total number of students and gender rates in all grades by gender (1990-2016)



Source: Compiled by using statistics published by DİE, TÜİK and MONE in various years.

this number increased to 5 million 519 thousand in 2016. The basic reason for this difference that occurred in 2016 is the decrease of the school starting age to 66 months during the 2012-2013 educational term, and no flexibility being applied for postponing the start to school, as well as an approach being demonstrated that supports 6 month old students to start primary school. For that reason, the number of students who enrolled in primary school for the 2012-2013 educational term increased by around 600 thousand compared to the previous year. In other words, whereas the number of students who enrolled in primary school in 2011 was around 1 million 244 thousand, the number of new admissions increased to 1 million 879 thousand in 2012 (MONE, 2012). With the graduation from primary school of some 600 thousand students and their enrollment in middle school, the number of primary school students sharply decreased in 2016 whereas there was a sharp increase in the number of middle school students.

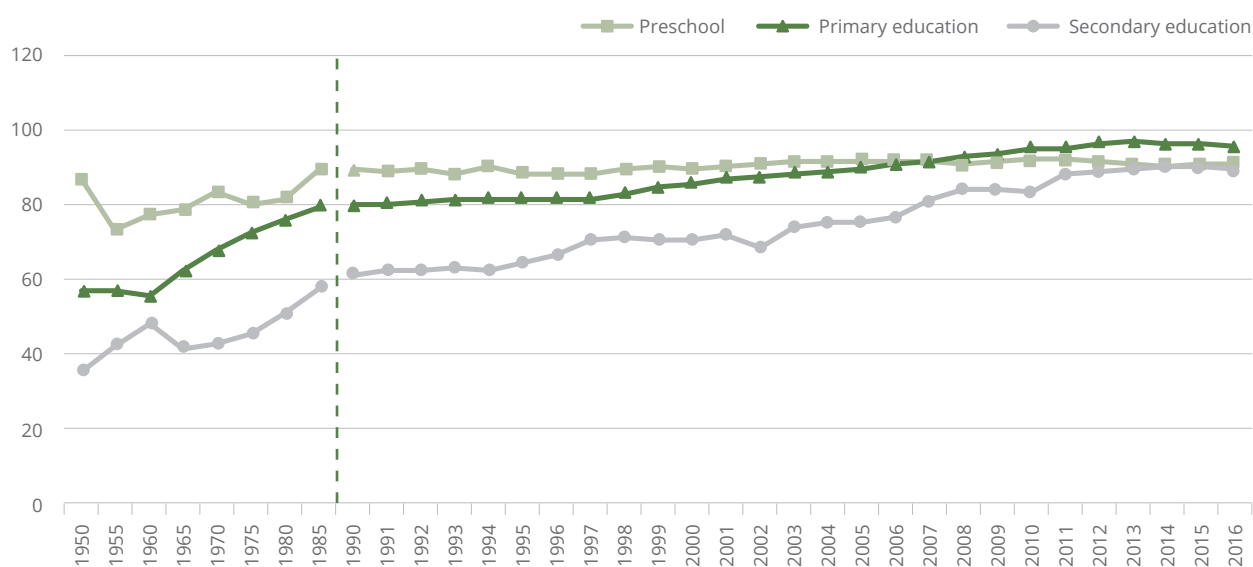
Figure A.2.3 gives the total number of students in preschool, primary school and middle school levels and gender rates for the period between 1990 and 2016. The gender rate which was indicated with lines in the figure demonstrates the number of female students being educated for every 100 male students. Accordingly, there is a stable increase

in the participation of female students in the education system over the years. Whereas 83 female students were included in the educational system in 2002 for every 100 male students, this rate rose to 93 in 2016.

National and international projects that have been carried out towards the schooling of female students are another factor that increased the schooling rates of girls. In addition to this, numbers of female and male students demonstrated a significant increase between 1990-2016 and the total number of female students demonstrated an even faster increase, approaching the number of male students. Between these dates, the number of female students increased from 4,715,534 to 8,539,422, and male students from 6,074,186 to 8,960,011. However there nonetheless remains some inequality, though little, in the schooling process between girls and boys.

Figure A.2.4 shows the change in the gender rates of students according to level between 1950-2016. According to these figures, the rates of females who participate in education among the students enrolled in primary school and middle school demonstrated a gradual increase between 1990 and 2016, and no apparent change was seen for preschool. Whereas there were 89 female students for

Figure A.2.4 Trends in gender rates of students by levels (1950-2016)



Source: The figure, prepared originally by Egitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

every 100 male students in 1990 at the preschool level, this rate increased to just 91 in 2016.

When the gender rates in elementary education are considered, it can be seen that after 1990 up until 1998 when the eight-year mandatory education began, there were 81 female students for every 100 male students enrolled in elementary education, this rate increased to 83 in 1998, with a continued increase in the following years, reaching 95 in 2016. According to gender rates calculated based on the male-female ratios of students enrolled in elementary education, it can be said that the gender inequality experienced in participation in education at the elementary education level has significantly decreased.

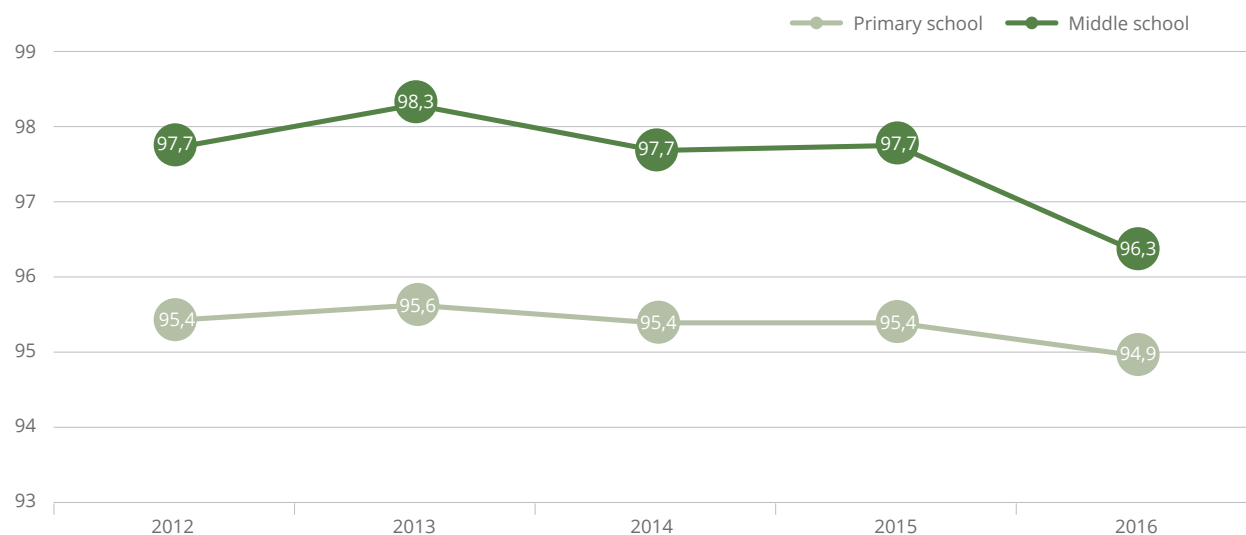
It can be seen that, at the secondary education level, the gender rate has a tendency to fluctuate more than at other levels. Although the participation of female students in secondary education demonstrated an increase over the years after 1990, the most important increase occurred after 2012 when the 4+4+4 system started.

While there were 69 female students enrolled in the secondary education system for every 100 male students in 2002, this rate increased to 90 in 2016.

The change in gender rates of primary and middle school students between 2012-2016 is shown in Figure A.2.5. According to this, the rate of 97.7 female students versus 100 male students in primary schools between 2012-2016 decreased to 96.3 female students; and the rate of male to female students in middle schools decreased to 94.9 from 95.4. This data demonstrates that there remains a disadvantage for females in regards to access to primary school and middle school education.

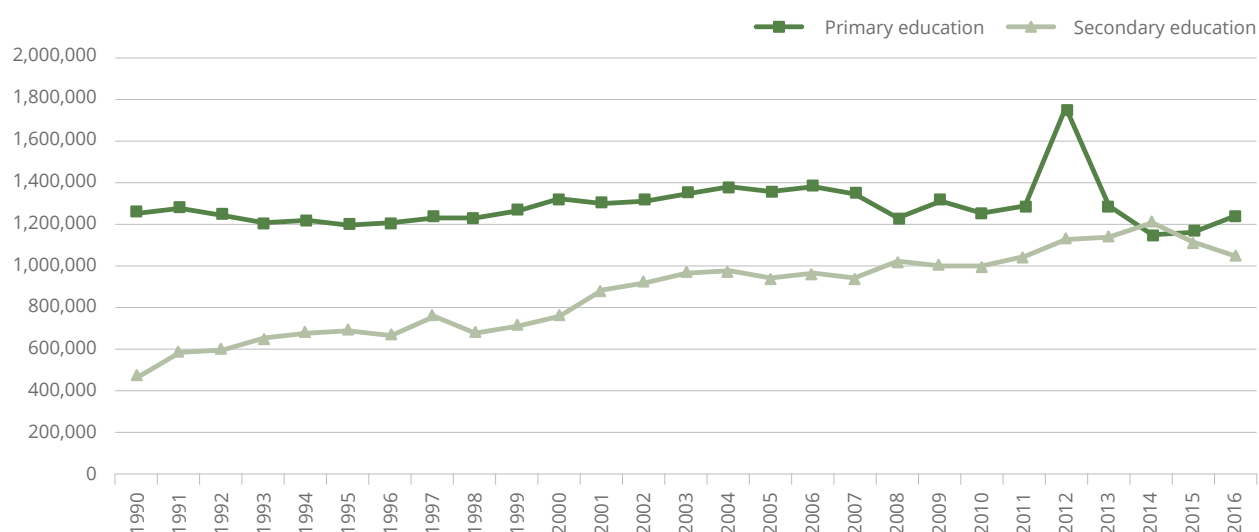
Figure A.2.6 shows the decrease in the number of newly enrolled students between 1990 and 2016 in primary school and middle school levels. The number of newly enrolled students is an important indicators which demonstrates the participation in education and the change to be seen in the upper education levels. No significant difference was observed in new enrollments in elementary education between 1990-2016, except for in 2012. The number of new students enrolled in elementary education in 1990 was 1,253,866, which decreased to 1,234,999 in 2016. After the 4+4+4 regulation in 2012, the school starting age was decreased to 66 months and it was decided to postpone the commencement of children older than 66 months to primary school unless they had a medical report.

Figure A.2.5 Trends in gender rates of primary and middle school students (2012-2016)



Source: Compiled using MONE statistics published in various years.

Figure A.2.6 Trends in the number of newly enrolled students in primary and middle schools (1990-2016)

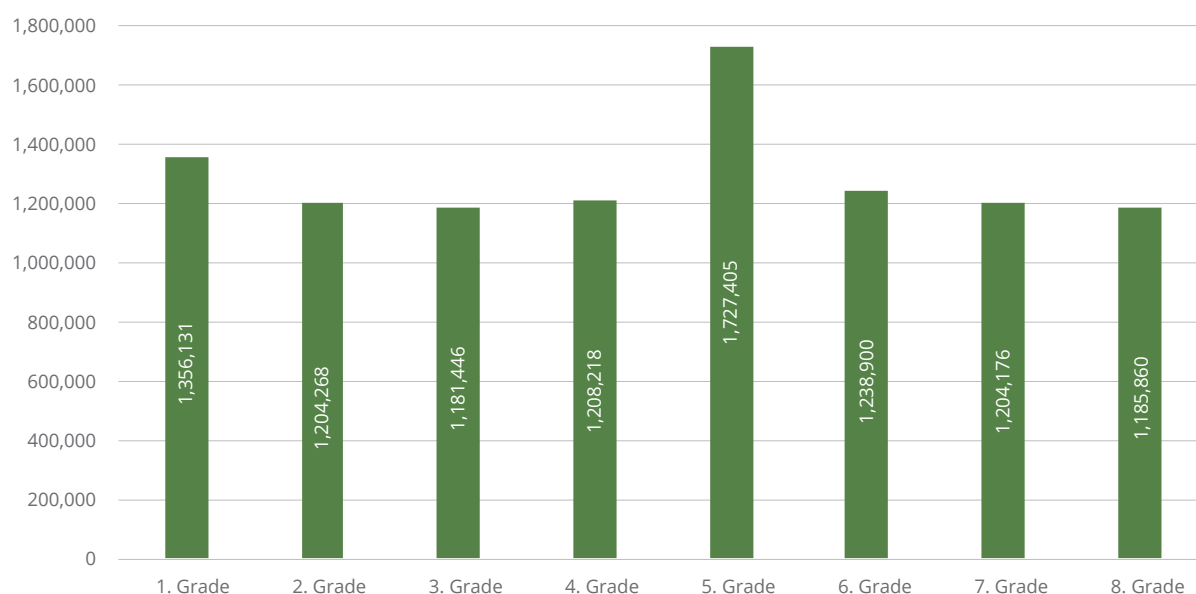


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TÜİK and MONE in various years was updated by the authors.
 Note: The number of students enrolled in open education were not included in the total in 2013 - 2016 data.

As a result, the number of children who started primary school in 2012 demonstrates a sharp increase, reaching 1,756,618. In 2013, consent from parents was considered sufficient for postponing the school start date for children older than 66 months. As a result of this decision, new enrollments in primary school remained around 1.2 million after 2013.

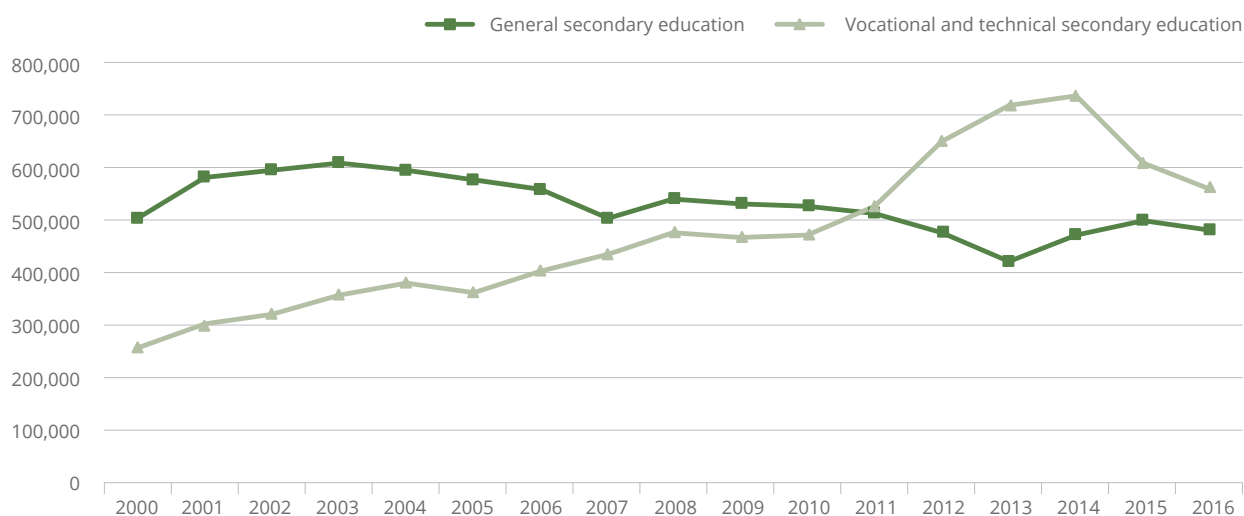
Between 1990-2014, the number of new enrollments in secondary education demonstrated a continuous increase, rising from 471,224 to 1,208,611. After 2014, the number of new enrollments in secondary education started to decrease, and dropped to 1,040,124 in 2016. As secondary education became mandatory in 2012, the number of students enrolled in secondary education increased significantly. However, in the following years, since some

Figure A.2.7 Number of students in elementary education by grade (2016)



Source: Compiled using MONE statistics published in various years.

Figure A.2.8 Trends in number of newly enrolled students by type of school (2000-2016)



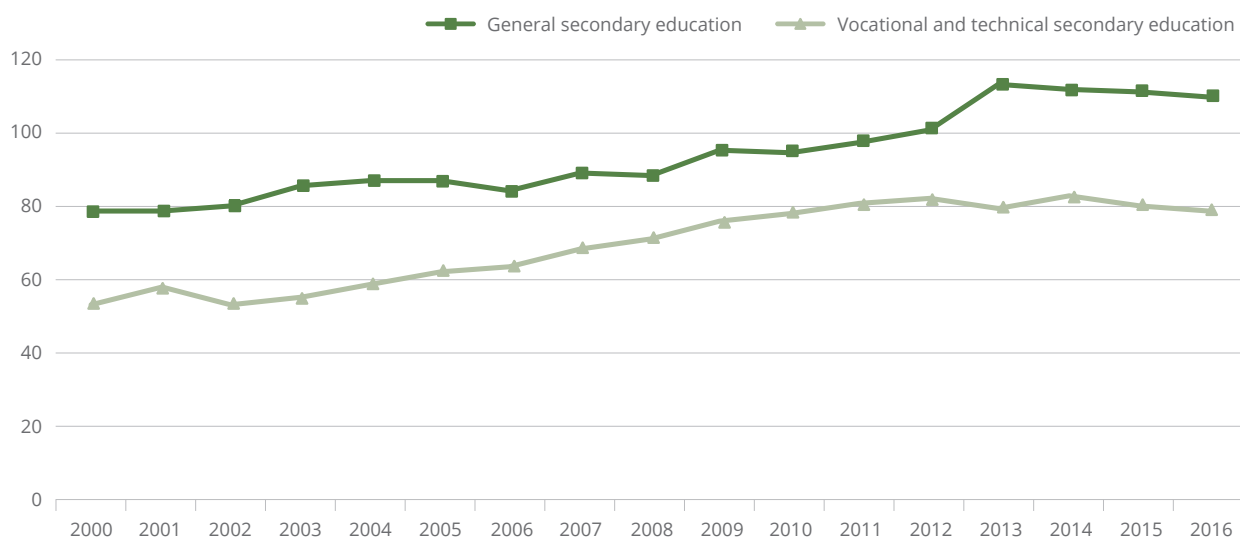
Source: Compiled using MONE statistics published in various years.

students were not placed in any formal programs with Transition from Basic Education to Secondary Education (TEOG) and directed to open education high schools, this number rapidly decreased.

Figure A.2.7 provides the number of students per level in the elementary education system. According to this, in

the 2016-2017 educational term, 1 million 356 thousand students were educated in primary school in the 1st grade and 1 million 727 thousand students were educated in middle school in the 5th grade. The number of students in other class levels was around 1.2 million. The reason that the number of students in 5th grade is higher compared to other grades is that the school starting age was

Figure A.2.9 Trends in the gender rates of students newly enrolled in secondary education by type of school (2000-2016)



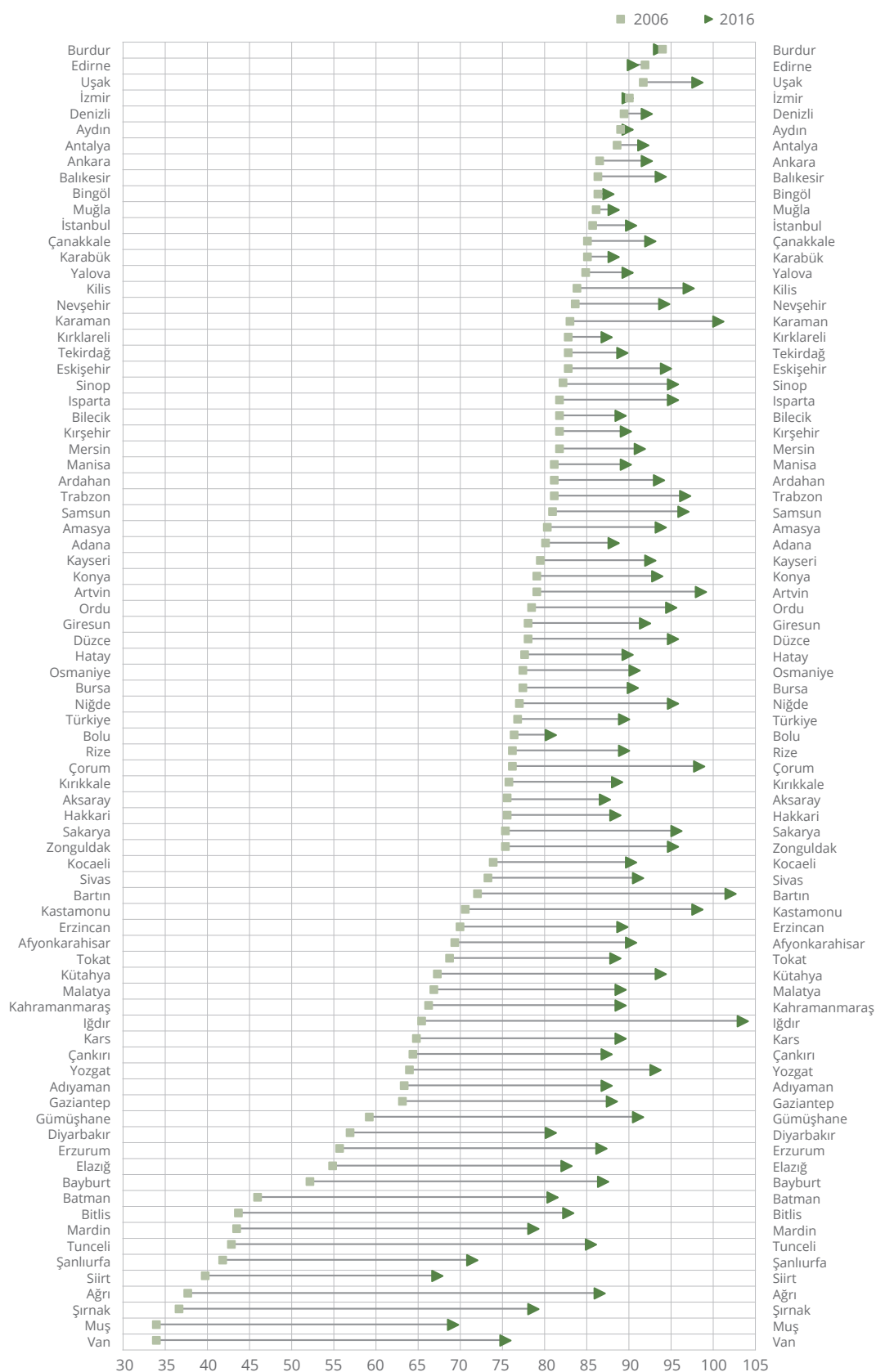
Source: Compiled using MONE statistics published in various years.

decreased to 66 months as indicated above which created obstacles in postponing the school start date, and with the opportunity given to those who are older than 60 months to start school, 600 thousand additional children enrolled in the 1st grade compared to the years before and after 2012. These children completed primary school in 2016 and enrolled in 5th grade.

Figure A.2.8 shows the change in the number of newly enrolled students in general high schools and vocational high schools between 2000 and 2016. According to this, whereas the number of students who newly enrolled in vocational high schools was around 255 thousand in 2000, the number of new enrollments in general high schools was 502 thousand, which is almost twice as high as enrollment in the vocational schools. Whereas the number of new enrollments in general high schools was relatively stable with a downward trend between 2000 and 2011, there was a regular increase in new enrollments to vocational high schools and in 2011, the number of newly enrolled students in vocational high schools passed the number of students newly enrolled in general high schools for the first time. In the following years, the number of newly enrolled students in vocational high schools increased further compared to general high schools, and

the gap between them increased. For example, whereas the number of newly enrolled students in general high schools in 2014 was around 471 thousand, this number was around 737 thousand in vocational high schools. In 2016, there were 480 thousand students enrolled in general high schools and around 559 thousand students in vocational high schools. The reason for this increase observed in the number of newly enrolled students in vocational high schools compared to general high schools is the opportunity given to pass to two-year degree schools without an exam and in particular the abolishment of the coefficient system that constituted a disadvantage for being educated in undergraduate programs for vocational high school graduates after 2012. In addition to this, İmam Hatip high schools are also included in the vocational education statistics. With the abolishment of the coefficient, there was an increased interest in İmam Hatip schools and the number of İmam Hatip schools rapidly increased after 2011 (see Figure D.1.2), for which reasons the number of new enrollments in the vocational education system rapidly increased. Finally, students who could not be placed into general secondary education with the TEOG placement system in the aftermath of the school transformation process, were obliged to be placed in schools with the vocational school status. The class

Figure A.2.10 Trends in the secondary education gender rates by province (2006-2016)



Source: Compiled using MONE statistics published in various years.

quota which was defined for a branch in general schools was determined as less than the class quota allocated for a branch in vocational high schools.

The change in the gender rates of students who were newly enrolled in general high schools and vocational high schools between 2000 and 2016 are given in Figure A.2.9. According to this, 78 new female students were enrolled in general high schools for every 100 male students in 2000. A rapid progress in favor of females has occurred in these rates in 2016, and 100 female students versus 100 male students were enrolled in general secondary education. Whereas 53 females versus 100 males were enrolled in vocational and technical secondary education in 2000, this rate was 79 females versus 100 males in 2016. As a conclusion, whereas the number of female students newly enrolled in general high schools was more comparable to the male students, the number of male students newly enrolled is still higher despite the fact that there has been no significant increase in vocational high schools.

When we examine the change in gender rates in secondary education by province in Figure A.2.10, it can be seen that

this rate has significantly increased compared to 2006 in all provinces excluding Burdur and Edirne. In provinces where the schooling rate of females was very low compared to males in 2006 in secondary education and most of which are in the East Anatolia and South East Anatolia Regions, there was a very significant increase in favor of females in 2016.

In many provinces, there was an increase in favor of girls with over 40 points in the ten-year period. For example, in 2006, whereas less than 40 females continued secondary education for every 100 males in Siirt, Ağrı, Şırnak, Muş and Van, this rate increase to 70 females for every 100 males in 2016. Although the gender rates in these provinces in secondary education in 2016 increased significantly compared to 2006, the fact that the gender rate is below 100% in provinces other than Karaman, Kastamonu and Iğdır demonstrates that the gender inequality in participation in the secondary education system is still ongoing. Indeed, gender inequality has continued to persist particularly in the East and South East Anatolia regions.

Under this indicator, the rates of change experienced in the number of students in general high schools and vocational high schools at the secondary education level between 1990-2016, are examined on the gender axis. Following this, the situation related to vocational high schools was handled in more detail and the change over the years in the number of students in science high schools, social sciences high schools, Imam Hatip middle schools and Imam Hatip high schools were handled in general terms and on the basis of gender.

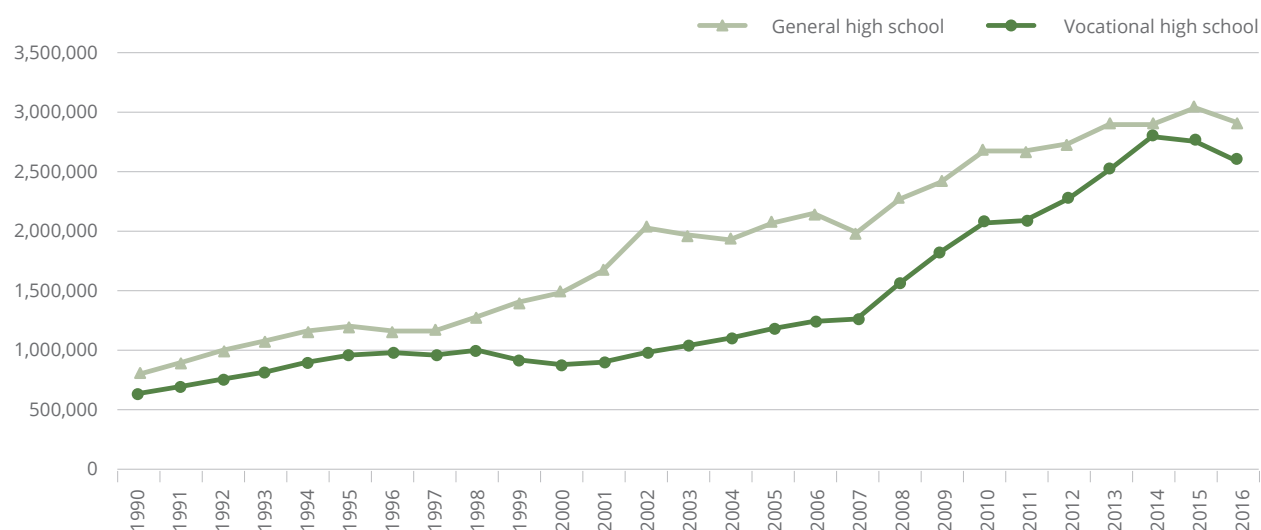
Figure A.3.1 demonstrates the change in the number of students in general high schools and vocational high schools between 1990 and 2016. According to this, the total number of students in both general and vocational high schools demonstrated a continuous increase over the years. The number of students in vocational high school increased from 627,274 to 2,601,638 between 1990-2016; and the number of students in general high schools increased from 799,358 to 2,912,093. Whereas until 1998 the vocational and general high schools had a number of students close in range, after that year there was an increase in the number of students in favor of general high

schools after that year. With the coefficient decision that began to be implemented in the transition to higher education after February 28, the number of vocational high school students decreased and the number of general high school students increased.

With the abolishment of the coefficient decision after 2012, the total number of students in vocational high schools approached the number in general high schools. Another important issue is that as can be seen from Figure A.2.8, despite the fact that the enrollments in vocational high schools were much higher compared to general high schools after 2012, the total number of students in general high schools is now higher than the total number of students in vocational high schools. The possible reason for this is the high number of school drop-outs and transfers to open learning in vocational high schools.

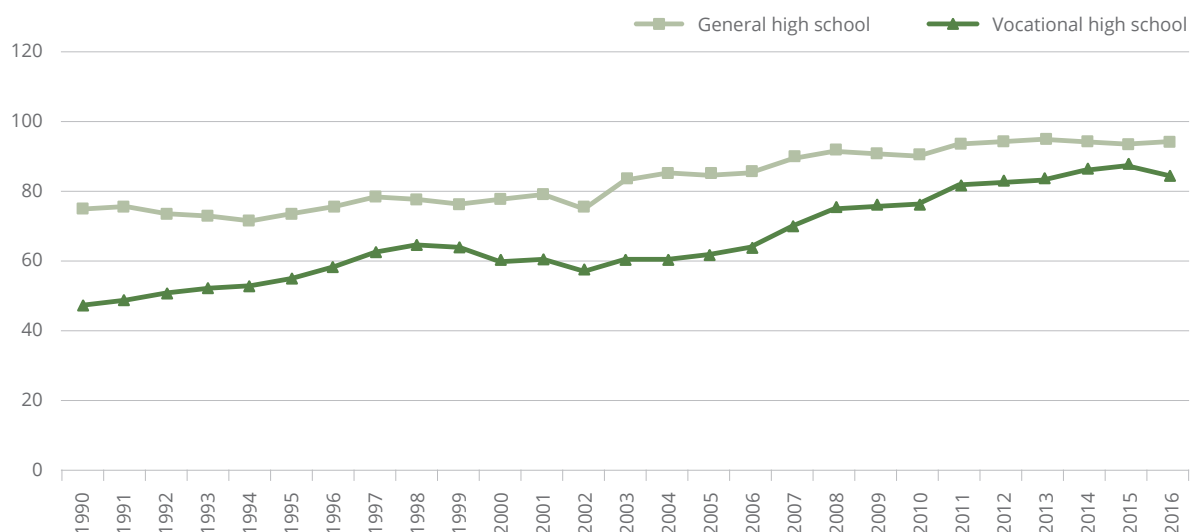
Figure A.3.2 shows the change in the gender rates in secondary education by school type for the years 1990-2016. The gender rate in general high schools between 1990-2016 had an overall positive trend, reaching 95 females for every 100 males in 2016 from 75 females for every

Figure A.3.1 Trends in total number of students according to type of schools (1990-2016)



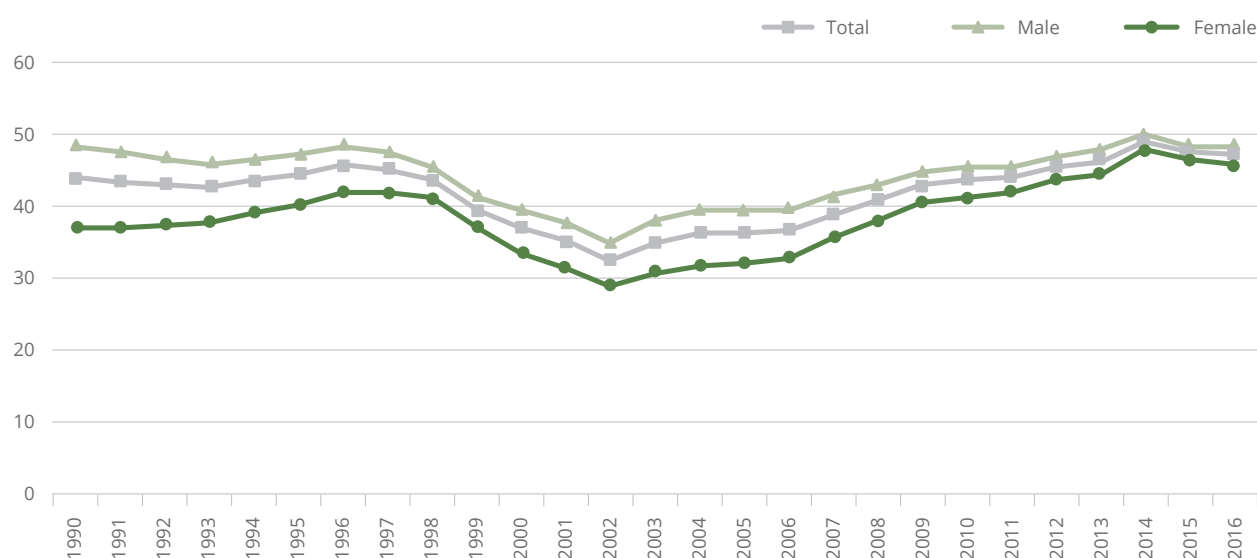
Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure A.3.2 Trends in the gender rates of secondary education students by school type (1990-2016)



Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure A.3.3 Trends in vocational high school students rates in secondary education by gender (%) (1990-2016)

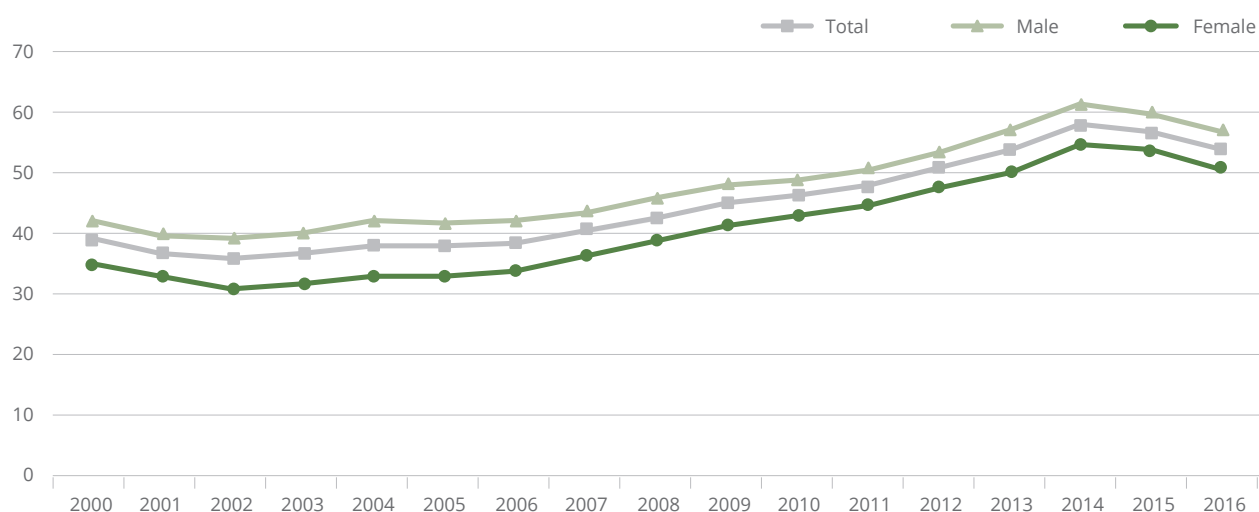


Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

100 males in 1990. It can be seen that the gender rates in vocational high schools have a similar trend to general high schools. Although lower compared to general high schools, the vocational high school gender rates have generally demonstrated a positive trend. Whereas 47 females were educated for every 100 males in the vocational high schools in 1990, this number increased to 85 females for

every 100 males in 2016. It is considered that the increase in the number of females in vocational high schools is generally affected by the increase in the general schooling rate of girls and also the increase in the number of programs that are geared towards female students in vocational high schools. Although the change experienced in the rates of female students both in general and in vocational high

Figure A.3.4 Trends in vocational high school students rates in secondary education by gender, excluding open education (%) (2000-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

schools has improved the current situation demonstrates that gender equality has not yet been ensured in secondary education.

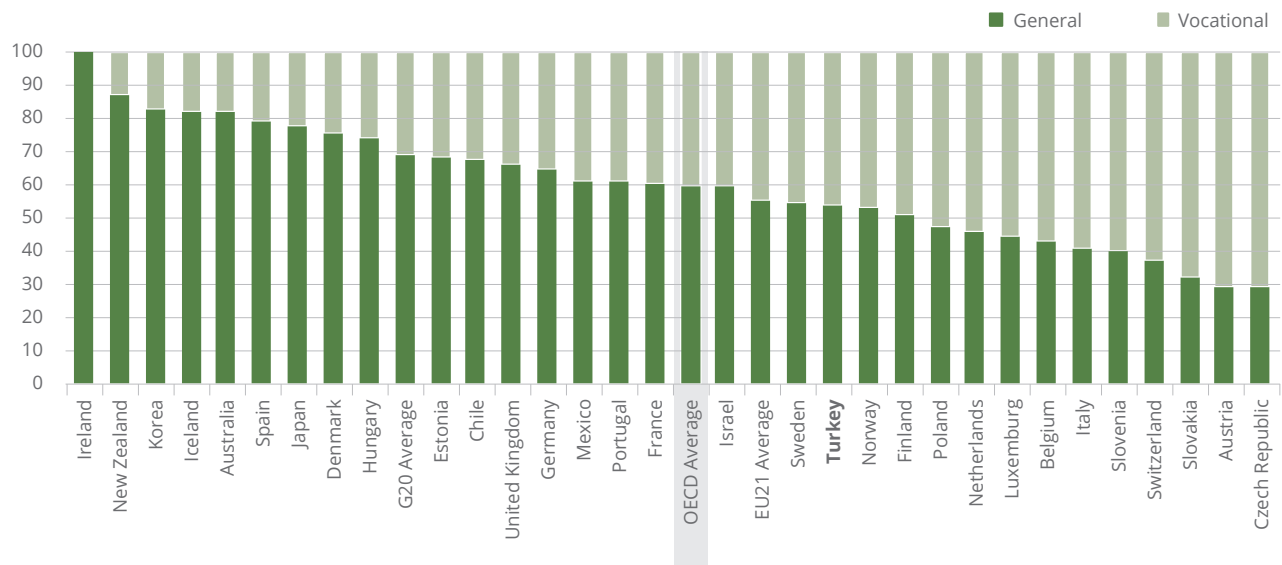
Figure A.3.3 demonstrates the change between 1990 and 2016 in the rate of male and female students being educated in vocational high schools among the overall student population in secondary education. The vocational high school rates given in this figure cover all secondary education including formal and open education. While 37% of the female students in general secondary education were in vocational high schools in 1990, 48% of the males are vocational high school students. In the year 2000, when the number of vocational high school students was the lowest as a result of the coefficient practice, the rate of males in vocational high school decreased to 35%, whereas the rate of females decreased to 29%. In 2014 when the number of students in the vocational high schools reached the general high schools, the rate of males in vocational high schools was 50% and for females this rate was 47%. When it comes to year the 2016, 46% of the females overall secondary education and 48% of the males were being educated in vocational high schools. These rates demonstrate that, overall within the secondary education system, 54% of the females and 52% of the males preferred general high school education.

Figure A.3.4 demonstrates the rate of female and male students being educated in formal vocational high schools, excluding open education, according to the total number of students in the formal secondary education system. Between 2000 and 2016, the rate of females being educated in vocational high school increased from 35% to 50%, and the rate of male students increased from 42% to 57%, and in total from 39% to 54%, excluding open-education. Most of the students in the formal education program, excluding open education students, are being educated in vocational high schools.

Figure A.3.5 gives the ratio distribution of the 15-19 age group in some OECD countries alongside Turkey by secondary education program type. Accordingly, in OECD countries in 2015, the proportional distribution of the 15-19 age group of students according to type of secondary education program is 58% in general high schools and 42% in vocational high school.

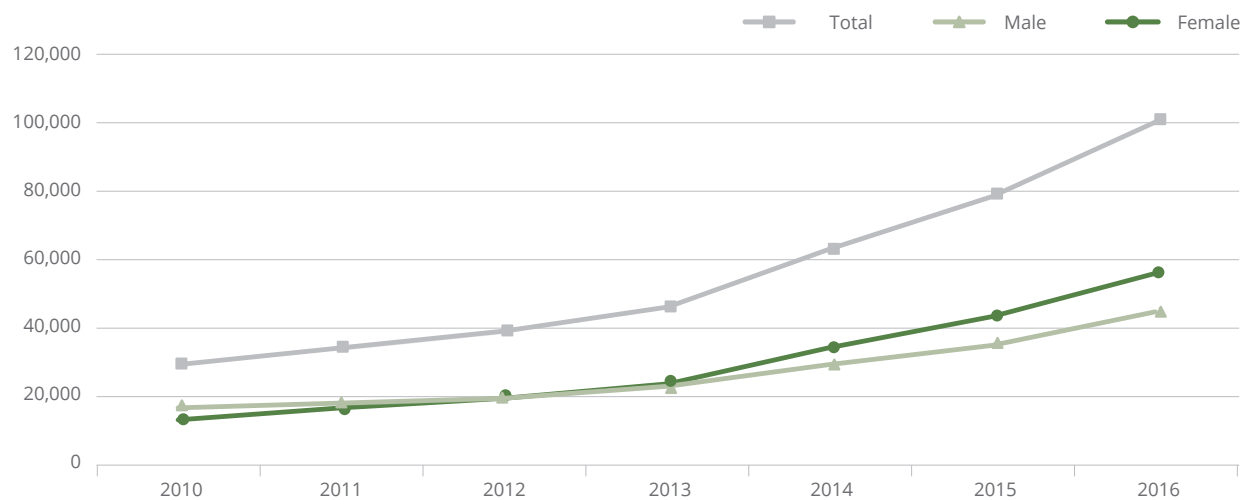
The proportional distribution of the 15-19 age group of students in Turkey by general and vocational high school program type in 2015 was 53% for vocational high schools and 47% for general high schools. This demonstrates that the rate of vocational high school students in Turkey is high. Another important data here is that many individuals and institutions declare that the vocational education

Figure A.3.5 Proportional distribution of students in the 15-19 age group by type of secondary education in OECD countries (%) (2015)



Source: OECD (2017b)

Figure A.3.6 Trends in total number of students in science high schools by gender (2010-2016)



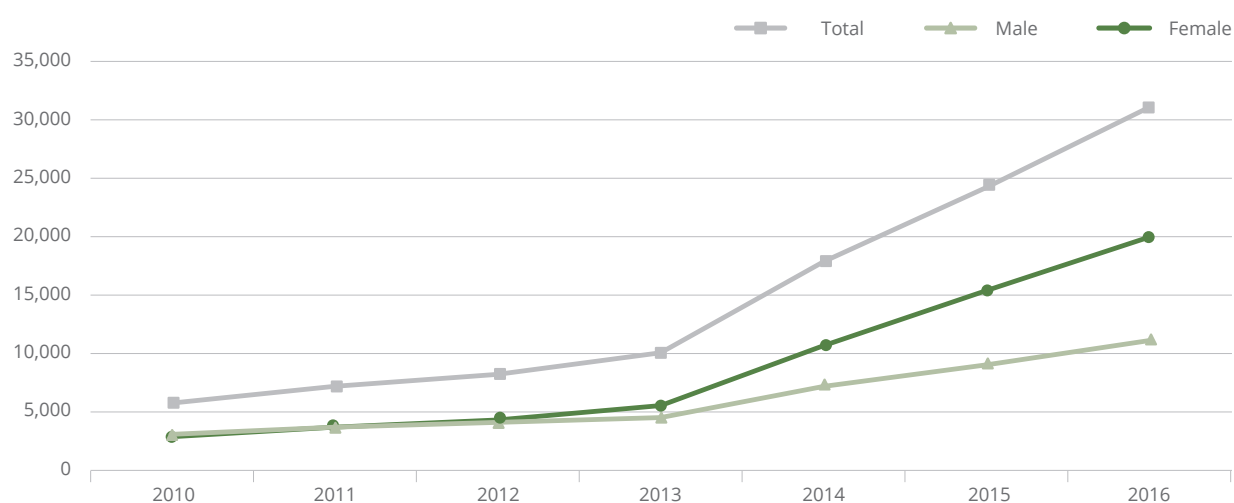
Source: Compiled using MONE statistics published in various years.
Note: Excluding private education science high schools.

in Turkey was not as important as in Germany for many years, and in Germany the vocational education rate was 65% compared to a general education rate of 35%. However, it can be seen that these claims do not reflect the reality and on the contrary, in Germany the academic education rate was 66% and the vocational education rate was 34% at that time. This data demonstrates that the widespread

information which constitutes a basis for Turkey's policy towards vocational education, is false.

Figure A.3.6 shows the total number of students in science high schools between 2010 and 2016, as well as the change in the number of female and male students. According to this, whereas the number of students studying

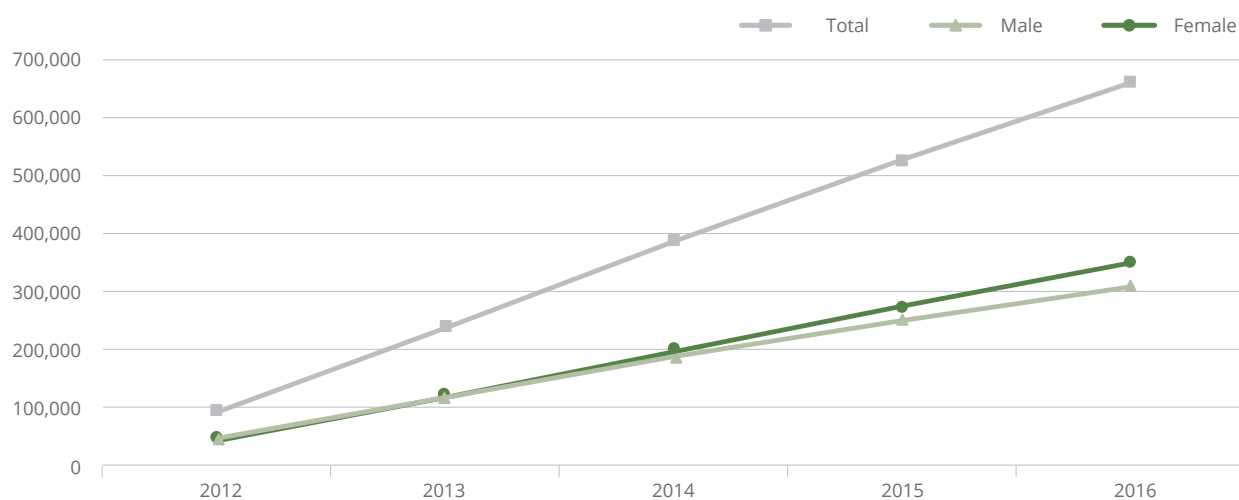
Figure A.3.7 Trends in total number of students in social sciences high schools by gender (2010-2016)



Source: Compiled using MONE statistics published in various years.

Note: Excluding Private Social Sciences High Schools

Figure A.3.8 Trends in total number of students in Imam Hatip middle schools by gender (2012-2016)



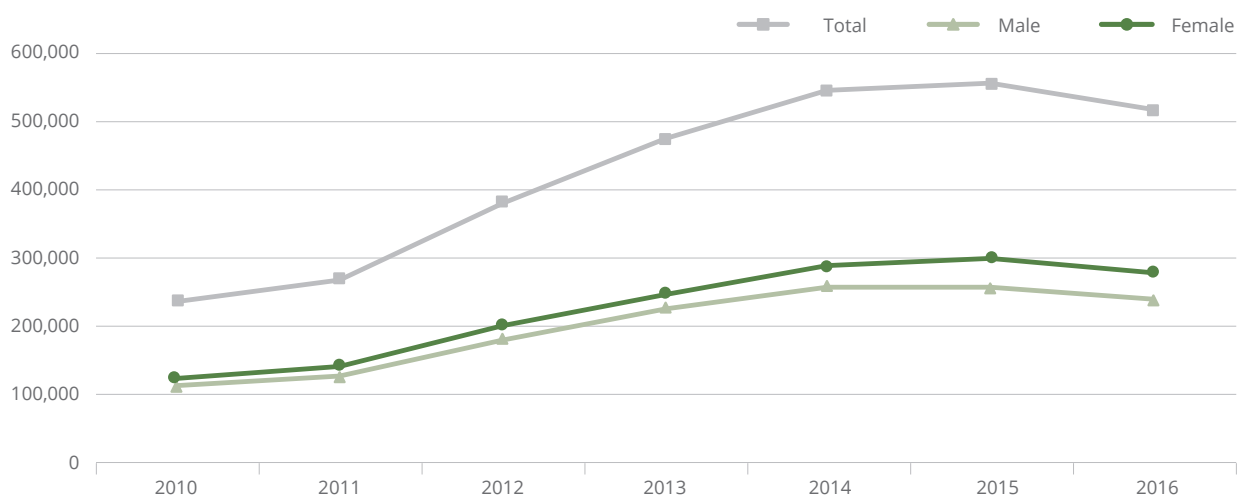
Source: Compiled using MONE statistics published in various years.

in public science high schools in 2010 was around 29 thousand, it increased gradually until 2013, reaching 46 thousand in 2013.

The number of students in science high schools which demonstrated a rapid increase after 2014, exceeded 100 thousand in 2016. The main reason that the number of students in science high schools demonstrated a rapid increase after 2014 is the closure of Anatolian teaching high schools and the conversion of these high schools into

science, social sciences and Anatolian high schools. As it can be seen in D.1.2, the number of high schools which was 150 in 2013, reached 232 in 2014. Besides, whereas the class population in high schools was maximum 24, this number increased to 30 with a change of regulation in 2014. Between 2010-2016, the number of female students in high schools increased from 12,578 to 56,099, and the number of male students increased from 16,480 to 44,312. An increase in the number of students in favor of girls is seen in science high schools.

Figure A.3.9 Trends in total number of students in İmam Hatip middle schools by genders (2010- 2016)



Source: Compiled using MONE statistics published in various years.

Figure A.3.7 shows the change in the numbers of female and male students in social sciences high schools in the years 2010-2016. The number of social science high schools, which were opened with 96 students in Istanbul after being included in the educational system in 2003 as a different type of school, increased to 27 in 2010, and the total number of students increased to 5,725. Following the transformation of Anatolian teaching high schools as mentioned above in 2004, the student numbers rapidly increased, reaching 30,972. Between 2010-2016, the number of female students increased from 2,755 to 19,972, and the number of male students increased from 2,970 to 11,000. This demonstrates that over time, there has been significant increase in favor of girls in the number of students in social science high schools.

Figure A.3.8 demonstrates the change in the number of İmam Hatip secondary school students between 2012-2016 on the axis of gender. İmam Hatip schools, which were closed in 1988 when elementary education was included under the scope of 8 year uninterrupted compulsory education as part of anti-democratic practices in the February 28 process, were re-opened again in 2012. In 2012, which is the year that İmam Hatip schools started admitting students again, the total number of students

was 94 thousand 467. In the following years, there was a significant increase in the number of İmam Hatip middle schools, reaching 657 thousand with an increase of 7 folds in 2016. Whereas in the years 2012 and 2013, while the female and male student numbers in İmam Hatip schools were equal to each other, after 2014, the number of girls exceeded the number of boys. Whereas the number of female students in İmam Hatip secondary schools reached 348 thousand in 2016, the number of male students was around 310 thousand.

Figure A.3.9 Shows the change in the numbers of female and male students in İmam Hatip high schools between 2010 and 2016. Accordingly, whereas in 2010, which is the year the coefficient difference practice previously applied against vocational high schools was abolished, the number of students in İmam Hatip schools was around 236 thousand, this increased significantly in the following years, reaching 517 thousand in 2016. In the years 2010-2016, the number of female students in İmam Hatip high schools increased from 123 thousand to 278 thousand, and the number of male students increased from 113 thousand to 239 thousand. It can be said that there was a significant increase in the interest towards İmam Hatip schools with the abolishment of the coefficient decision.

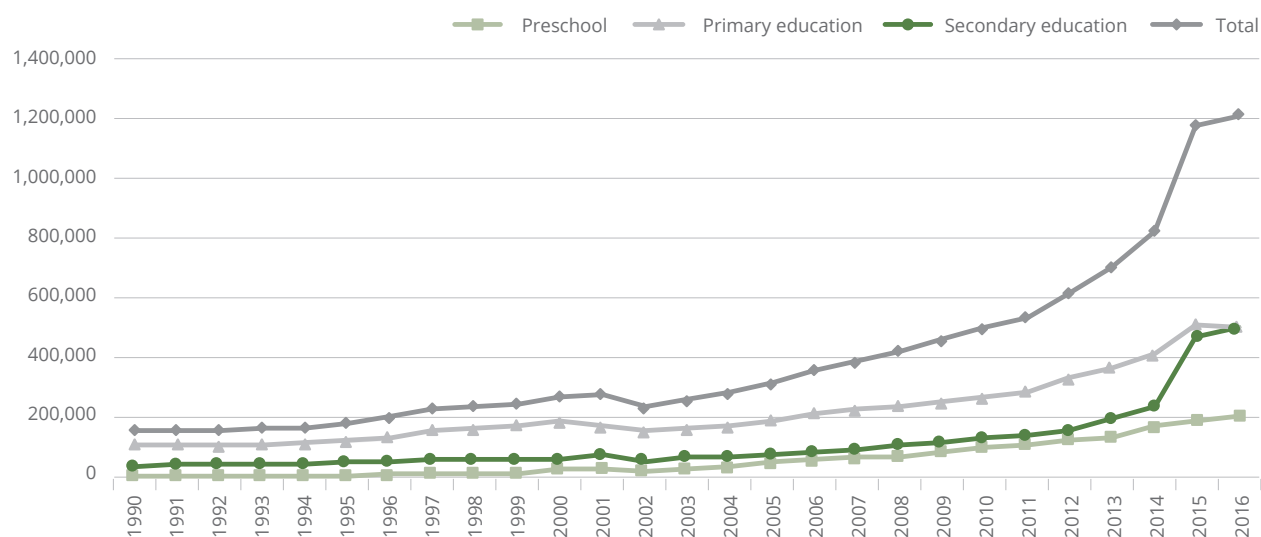
Under this indicator, first the change observed in the number of students in private education institutions by levels are examined for the period between 1990 and 2016. After that, the number of students in private educational institutions is studied and the change in the gender rate is given. After examining in detail the proportional distribution of students in private education institutions over the years by levels and the share of students in private education institutions within the total number of students by level, rates of private education students in different countries are given in order to provide a snapshot of Turkey's private education system in comparison to other countries.

When we look at the total number of students in private education institutions between 1990 and 2016 (see Figure A.4.1), it can be seen that there is no significant change in the total number of students from 1990 to 2002. Whereas the number of students in all levels of private educational institutions in 2003 was around 233 thousand, this increased to 1 million 205 thousand in 2016. The reason for this is related to the transformation of private courses to private high schools and basic high schools after 2014. The number of students in private high schools was 240,171 in 2014, which reached 472,611 increasing two fold in 2015.

Whereas the number of preschool students increased from 7 thousand to 203 thousand between 1990-2016, the number of elementary school students increased from 111 thousand to 500 thousand. A significant increase was seen in other private school levels as well as high schools after 2013. The most important reason for this increase could be the implementation of incentives for private school enrolments.

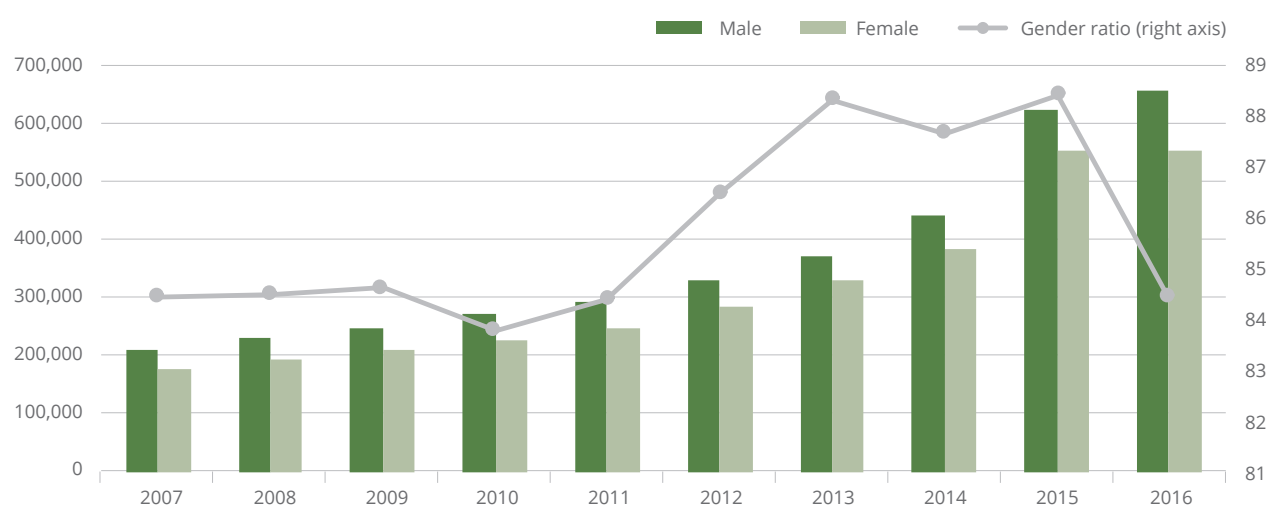
The change between 2007 and 2016 in the number of female and male students in private educational institutions and in gender rates is shown in Figure A.4.2. The gender rate which was shown as linear in Figure A.4.2 shows the number of female students per 100 male students in private education institutions. According to that, it can be seen that there is a linear increase from 2007 to 2016 in the number of female students enrolled in private education institutions. Whereas the number female students registered in private education institutions in 2007 was around 177 thousand, this figure increased by around 3.2 folds in 2016, reaching 551 thousand. The number of male students in private schools increased from 210 thousand more than three folds reaching 653 thousand. Despite a fluctuation over reference years in regards to the gender

Figure A.4.1 Trends in number of students in private education institutions by level (1990-2016)



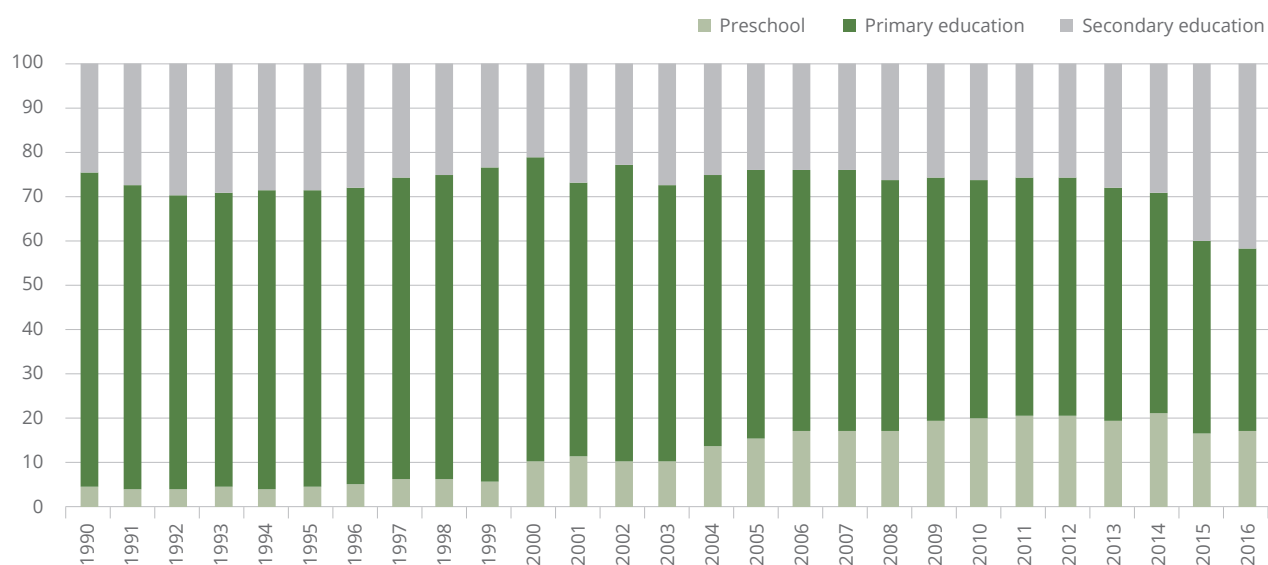
Source: Figure prepared by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years.

Figure A.4.2 Trends in the total number of students and gender rates in private education institutions by gender (2007-2016)



Source: Compiled using MONE statistics published in various years.

Figure A.4.3 Trends in proportional distribution of students in private education institutions by level (%) (1990-2016)



Source: Compiled using MONE statistics published in various years.

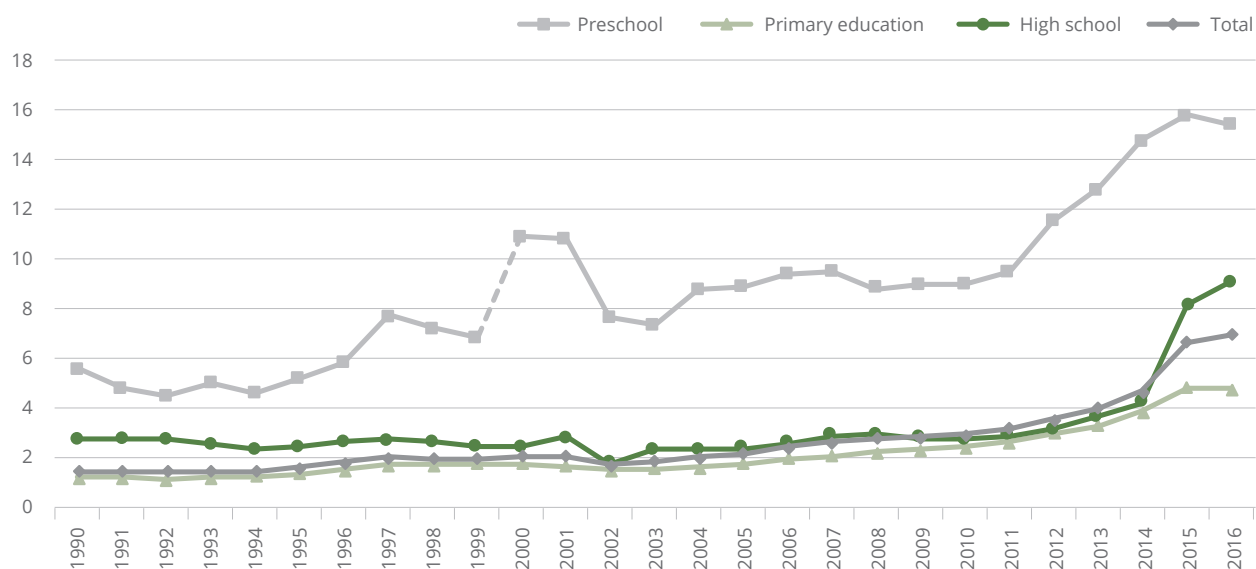
rate, the female to male ratio is 84 female students for every 100 male students. In other words, the general status quo regarding access to education for female students is not observed in private schools.

Figure A.4.3 demonstrates the change in proportional distribution of students in preschool, primary school and secondary school between 1990 and 2016. According to

this, 71% of students in private education institutions in 1990 were primary school students, whereas 25% were secondary school students and only 4% were preschool students.

In 2016, 41.5% of the total number of students in private education institutions were in secondary education, 41.6% in elementary education and 16.8% in preschool

Figure A.4.4 Trends in the share of students in private education institutions in terms of the total number of students by level (%) (1990-2016)



Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

education. With the transformation of private courses to private schools or basic schools, the number of high schools among private schools increased significantly.

Figure A.4.4 shows how the share of students who received training in private education institutions among the total number of students changed between 1990 and 2016. Whereas the rate of students in all levels of private education institutions among the total number of students was 1.45% in 1990, this number had a slight increase in 2003 to 1.86%. The rate of students in private education institutions, which entered a rapid increase trends after 2003, increased to 3.99% in 2013. The most significant increase observed in the rate of students in private education institutions among the total number of students was seen after 2014. After the transformation of private courses into basic high schools and the launching of incentive programs for private schools, the rate which was 4.69% in 2014 reached 6.96% in 2016.

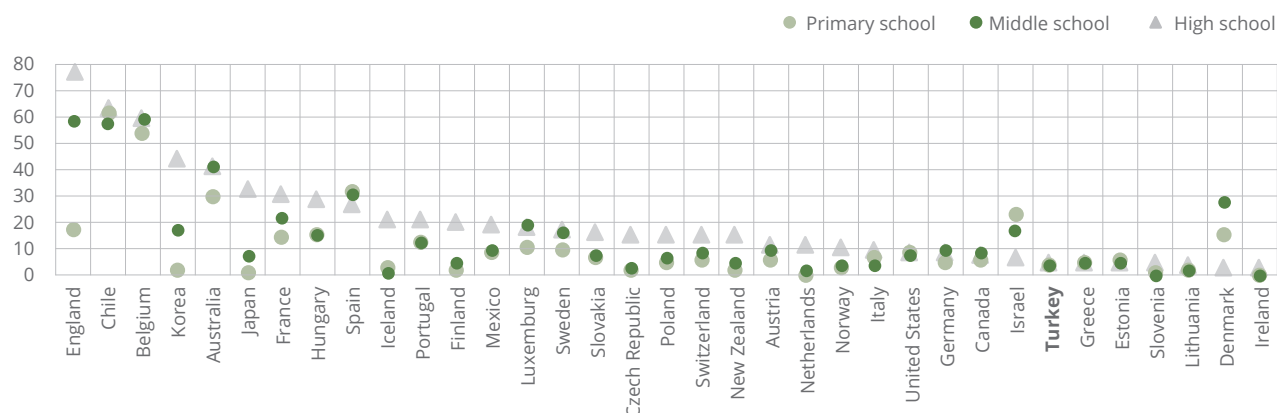
When the share of students in private education institutions among the total number of students is examined according to level, an overall stable growth is seen over the years in the elementary and secondary education levels.

However, the rate of preschool education in private institutions have incurred significant fluctuations between

the period of 1990-2016. Whereas the rate of private preschool students among the total number of students in preschool was 5.7% in 1990, this number increased to 11% in 2000, decreased to 7% in 2003 and then increased again to 15.5% in 2016.

Figure A.4.5 gives the rates of private education students in different levels in OECD countries. The schooling rate in private schools in OECD countries differ depending on the levels. The reason for this is the policies applied by different countries related to the private education being given through private institutions. Whereas the private schooling rate is lower at the primary school level in many countries, this level is higher at the high school level. According to 2015 data, it can be seen that the rate of students in private education institutions at the primary, middle and high school levels in Turkey is around 4-5%, which is lower than rates in many countries. One of the most important issues in Figure A.4.5 is the high rate of students particularly in private high schools in many of the countries. As previously discussed, despite the significant increase in the number of private secondary education institutions in Turkey's in recent years, the rate of students in private high schools is at the same level as that of private elementary education. This demonstrates that the number of students in private secondary education was quite low in previous years.

Figure A.4.5 Rate of private education students at different levels of education in OECD countries (%) (2015)



Source: <http://stats.oecd.org/>

Basic High Schools

In 2014, the word “cram school” was removed from the law by changing the Private Education Law. In the Private Education Institutions Regulation, which was enacted in the same year, it was indicated that private cram schools which could not transform into private schools would remain as basic high schools until the end of the 2018-2019 term. Following these regulations, there was a significant increase in the number of private education institutions and students. Because, private cram schools which were included under the scope of widespread education in the past, transformed into basic high schools and were thus covered by private education (Eğitim-Bir-Sen, 2016).

Under this scope, Table A.4.6 provides the number of basic high school institutions teachers and students in Turkey for the years 2016 and 2017. According to this, the number of basic high school institutions in February 2016 is 1205. In October of the 2016-2017 Educational term, the number of basic high schools decreased to 1046. In the second term of 2016-2017, part of these institutions were

closed and the number of basic high schools decreased to 1007. In the last three periods, there was a decrease in the number of teachers in line with the decrease in the number of basic high schools, and also student numbers increased. As a matter of fact, whereas there were 22 thousand 67 teachers and 182 thousand 867 students in these institutions in February 2016, the number of teachers in October 2016 decreased to 20 thousand 300 and the number of students increased to 199 thousand 486. In the second period of 2016-2017, the number of students decreased to 19 thousand 928 in connection with the decrease in the number of institutions, and subsequently the number of students decreased to 214 thousand 551.

Figure A.4.7 shows the distribution of students studying in basic high schools by grade for the years 2015 and 2016. When the distribution of students in basic high schools by grade level is examined, it can be seen that 17% of the students in basic high schools in 2015 were in the 9th grade, 8% were 10th grade, 17% were in 11th grade and 58% were 12th grade students. When it comes to the year 2016, the rate of 9th grade students decreased to 14%

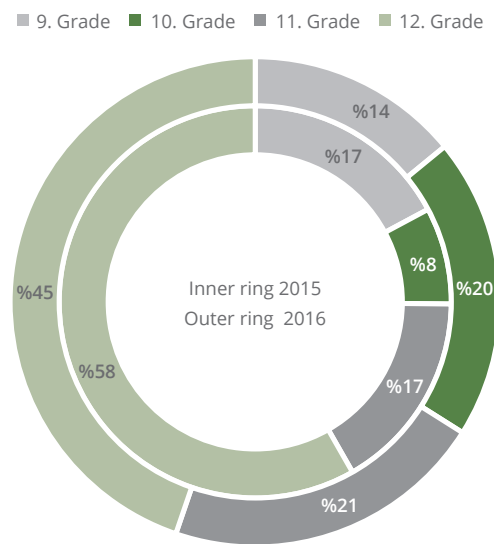
Table A.4.6 Numbers of schools, students and teachers in basic high school (2016-2017)

Academic year	Number of institutions in basic high school	Number of students per class in basic high school				Total	Number of teacher in basic high school
		9. grade	10. grade	11. grade	12. grade		
2016 February	1,205	31,409	14,627	30,292	106,548	182,876	22,067
2016 October	1,046	28,066	39,672	42,485	89,263	199,486	20,300*
2016-2017 II. period	1,007	-	-	-	-	214,551	19,928

Source: Compiled using the data shared by MONE (February and October 2016) and MONE Statistics.
Note: * Contains 2016-2017 1st Period National Education Statistics.

and the rate of 10th grade students increased to 20%. Whereas 21% of the students in basic high schools were 11th grade students, the rate of students in 12th grade decreased to 45%. The most striking issue in the number of students in basic high schools is the high number of students enrolled in 12th grade. Despite the fact that under Article 51 of the Private Educational Institutions Regulation of the Ministry of National Education dated 20/03/2012 it was indicated that the number of students registered in each class level shall not exceed 40% of the total quota, the rate of 12th grade students was 58% in 2015 and 45% in 2016. Due to perception that basic high schools are more advantageous than other high schools in transitioning to higher education, there is a Transition from public schools to basic schools in the final grade of high school. Moreover despite the fact that it is indicated in the law that basic schools will be closed in 2018-2019, it was observed that they continued to admit students for 9th grade.

Figure A.4.7 Proportional distribution of students in basic high schools by grade (%) (2015-2016)

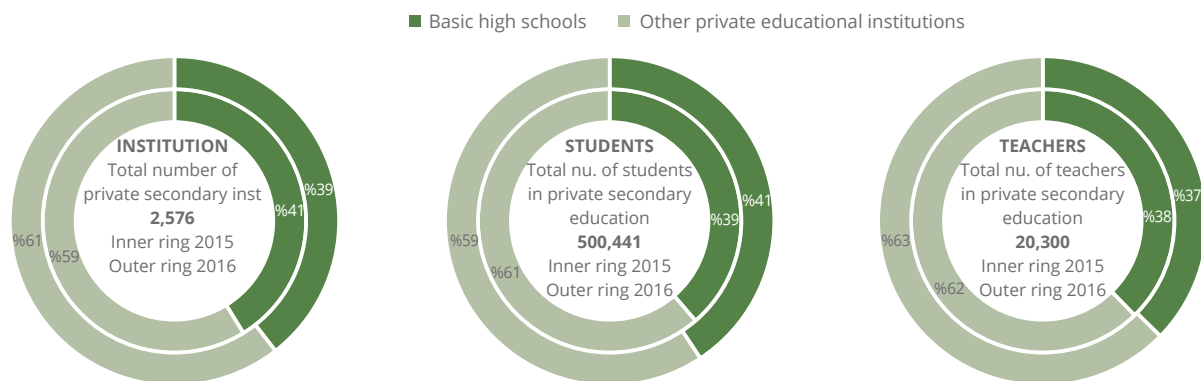


Source: Compiled using data shared by MONE (February and October 2016)

Figure A.4.8 demonstrates the share of students and teachers of basic high school institutions among the number of students and teachers of private secondary education institutions in 2015 and 2016. According to this, whereas the number of basic high schools in 2015 represented 41% among all private secondary education institutions, this rate decreased to 39% in connection with the decrease in the number of institutions in 2016. In connection with the decrease of the share of basic high schools among the total number of private secondary institutions, the number of teachers also decreased proportionally. Whereas in 2015 the rate of teachers in basic high schools in all private

secondary education institutions was 38%, this decreased to 37% in 2016. On the other hand, the share of students enrolled in basic high schools among all students enrolled in private secondary high schools was 39% in 2015, which increased to 41% in 2016. This increase observed in the number of students despite the fact that the number of basic high school institutions increased, demonstrates that basic high schools are still important centers of attraction. The fact that basic high schools fulfill the function of both school and private course demonstrates that a similar trends will occur in future periods.

Figure A.4.8 Share of basic high school institutions, students and teachers among private secondary education institutions, students and teachers (%) (2015-2016)



Source: Compiled using data shared by MONE and MONE Statistics (February 2016)

In the 70th general council of the United Nations held in 2015 17 fundamental objectives were adopted under the scope of sustainable development targets for the purpose of abolishing poverty in the world, protecting the planet and ensuring that all humans live in peace and prosperity. The fourth of these 17 objectives was defined as “providing quality education covering all and at equal level to all, and also providing lifelong education opportunity for all” (OECD,2017a, p.27). Distant education models, which are developed in order to ensure access and participation of people situated outside the formal education system for various reasons, have a critical importance in realizing this objective. The most widely used model among the distant education models is the open education model. The open education model which was applied in the higher education system for the first time in Turkey, was established within the body of Anadolu University in the 1980s and began to be implemented by other universities in recent years (Çetinsaya, 2014; YÖK, 2007).

The implementation of remote education at the secondary education level, started with an open education high school that was established in 1992 under the MONE Film Radio and TV Education Department. The open education high school continued its activities after 1998 under the body of the Education Technologies General Directorate and thereafter was affiliated to the Lifelong Education General Directorate, which was established with the Decree Law dated 14 September 2011 No. 652 (YEGİTEK, 2015) In 1996, vocational secondary education programs were offered under the scope of open education high schools. Vocational open education high schools were established under the body of Educational Technologies General Directorate in 2006 in order to implement vocational secondary education programs in a more effective manner under the scope of open education high schools (Güçlü and Bozgeyikli, 2017). In addition, there are now also open education İmam Hatip high schools, which began operating in the 2016-2017 educational term under the body of Lifelong Education General Directorate.

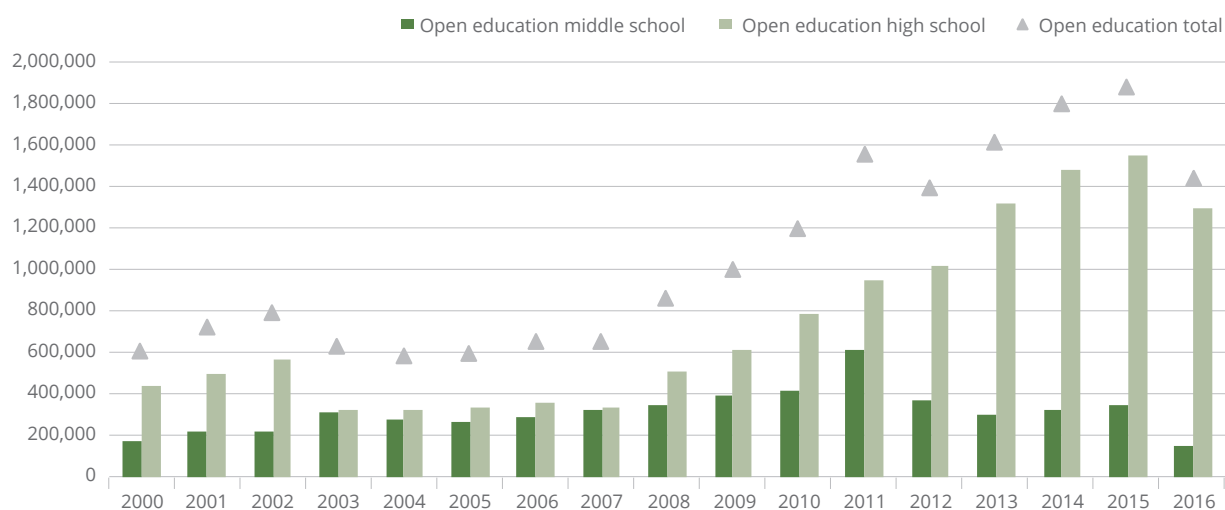
The distant education practice at the primary education level started in the 1998-1999 educational term under the Education Technologies General Directorate with the establishment of open elementary education schools and this has been connected to the Lifelong Education General Directorate since 2011. In connection with the separation of primary school and middle school with Law No. 6287 which increased mandatory education to 12 years in 2012, the name was changed to “Open Education Middle School” with a Regulation Amending Open Elementary School Regulation of the Ministry of National Education dated July 21, 2012.

Taking into account the number of students enrolled in all open education schools under the scope of distance education, it can be seen that open education has a significant role in access and participation to education. For that reason, first the change in the number and the rate of students by open education middle school and high school was considered under this indicator. After that, the numbers and rate of students in open education high schools were explained according to gender and school type. Finally, the number of open education graduates between 2000-2015 were examined.

Figure A.5.1 shows the change in the number of open education middle schools and open education high school students for the years 2000-2016. According to this, whereas the total number of students in open education middle schools and high schools was 600 thousand 244 in 2000, this rate reached a total of 1 million 874 thousand in 2015. In 2016, it decreased to 1 million 429 thousand by 450 thousand compared to 2015. 142 thousand 557 of these students are open education middle school students and 1 million 287 thousand are open education high school students.

The most striking issue in the change in the number of students in open education high schools between 2000-2016 was the increase observed in the number of students

Figure A.5.1 Trends in the number of students in open education secondary schools and open education high schools (2000-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TÜİK and MONE in various years was updated by the authors.

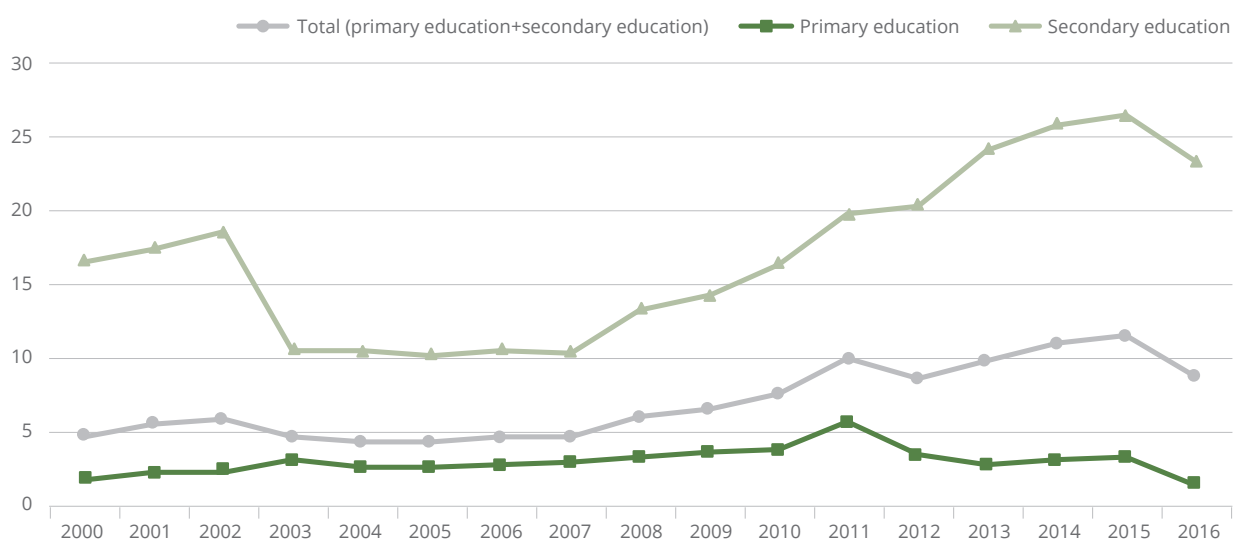
in open education high schools after 2012, which is the year secondary education was included under the scope of mandatory education. According to the Secondary Education Institutions Regulation, a student who repeats a class twice is now directed to open education. The number of students in open high schools has been increasing as a result of 12-year mandatory education. In addition to this, students who have not been placed in any high schools in the TEOG system placement process, were mandatorily placed in open high schools. For example, in the year 2017, 270 thousand students were directed to open high school at the 9th grade level (Çelik, Boz, Arkan and Toklucu, 2017).

The fact that the Ministry of Education directs hundreds of thousands of students who are at mandatory education age to open education, demonstrates that the open high schools are still being considered as a “warehouse” for unsuccessful students (Eğitim-Bir-Sen, 2016). Finally, there was a significant decrease in 2016 compared to 2015. One of the possible reasons for this is the ability to enroll up to three times a year in open education and this year MONE published a book on these statistics in two different periods

for the first time. According to the National Education Statistics of 2016-2017 for the second period, there were 199 thousand students in open education middle school, 1 million 555 thousand in open education high school, and a total of 1 million 754 thousand students in the open education system in total (MONE, 2017). Therefore, based on the open education data at the beginning of 2016-2017 educational year, it can be seen that there was no decrease in the number of open education students and there was an increase in open education high school when we look at the statistics for the second term.

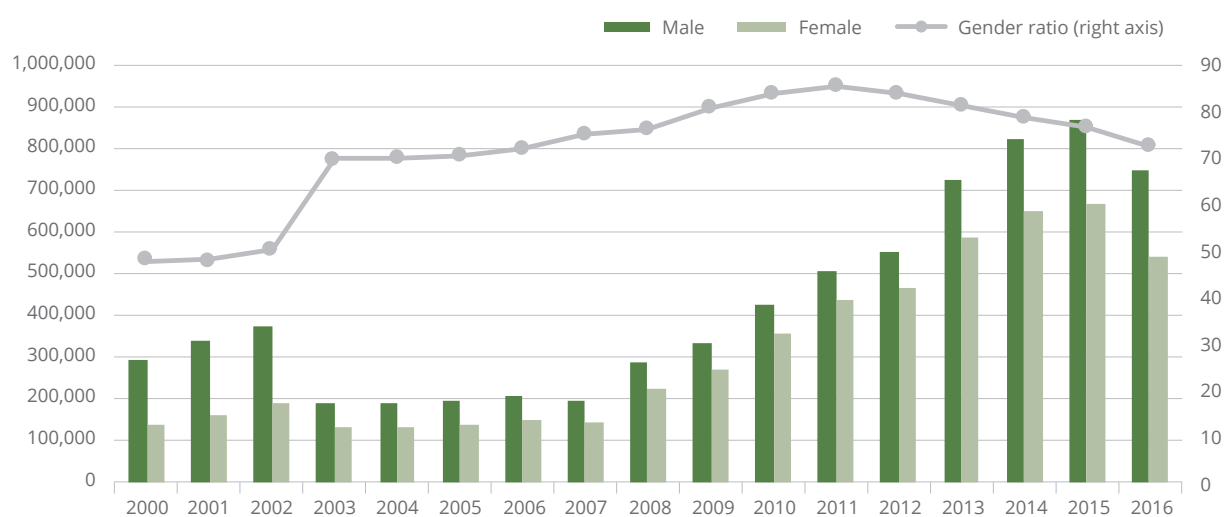
Figure A.5.2 shows the changes in the rates of open education students in elementary education and secondary education between 2000 and 2016. According to this, the number of elementary and secondary open education students among the total number of students was 4.6% in 2000, and this rate had a significant increase trend after 2007, reaching 11.4% in 2015. In 2016, this rate was 8.7%. It is a principle that students among the elementary age population continue to elementary education. Namely, the student body in open elementary education also

Figure A.5.2 Trends in open education student rates in elementary education and secondary education (%) (2000-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure A.5.3 Trends in the total number of students and gender rates in the number of open education high school students by gender (2000-2016)

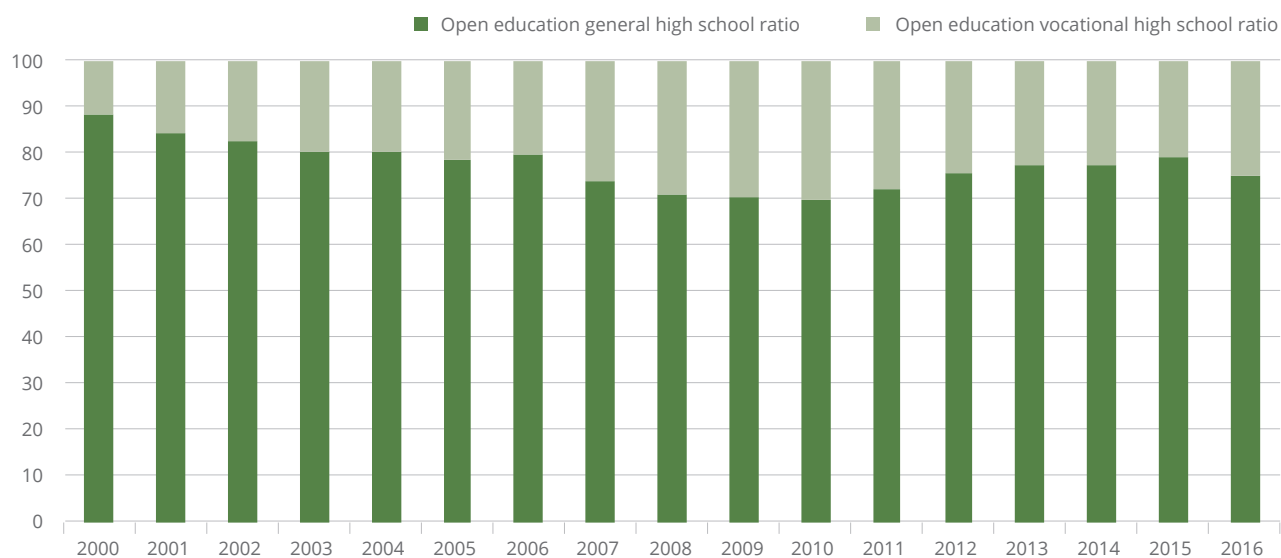


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

comprises students outside the age population. The rate of students in open elementary education is far lower compared to open high schools. This rate decreased from 1.6% to 1.3% between 2000-2016. The rate of students in open high school increased from 16.5% to 23.4% between 2000-2016. Namely, one fourth of high school students are open high school students.

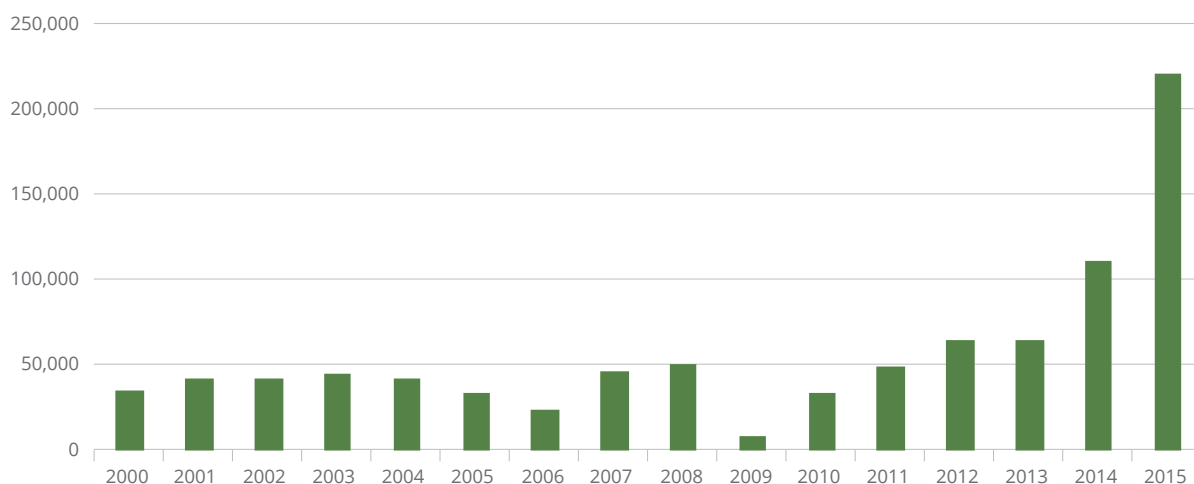
Figure A.5.3 demonstrates the change in the number of female and male students enrolled in open education high schools and the gender rates between 2000-2016. The gender rate which was shown as linear in Figure A.5.3 shows the number of female students per 100 male students in open education high schools. Accordingly, while there were 48 female students for every 100 male

Figure A.5.4 Trends in proportional distribution of students in open secondary education by school type (%) (2000-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TÜİK and MONE in various years and updated by the authors.

Figure A.5.5 Trends in the number of students graduated from open education high school (2000-2015)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using the data obtained from the Open Education High School website and updated by the authors.

students enrolled in open education high schools in 2000, this rate stably increased until 2011 and reached 86 female students for every 100 male students in 2011. The gender rate which started to decrease after 2012, was 73 in 2016.

Figure A.5.4 shows the changes in the proportional distribution of general high school and vocational high

school students in open education between 2000 and 2016. Since vocational education is a type of education that requires applied face to face training, students in open education vocational high schools receive their theoretical education via remote education and e their applied training through face to face education in vocational high schools approved by provincial or district national

education directorates where they reside. Whereas the rate of students enrolled in open education general high school was 88.3% in 2000, the rate of students enrolled in open education vocational high schools was 11.7%. In other words, 88 out of 100 students enrolled in open secondary education were receiving a general high school education in 2000, and 12 thereof were receiving a vocational education. Over the years, the rate of open education vocational high school students increased by 30% between 2009 and 2010.

In the year 2016, the rate of students enrolled in open education high schools among the total open secondary education population was 25%. According to this rate, three out of every four students enrolled in open secondary education in 2016 receive general high school education and one receives vocational high school education.

Figure A.5.5 demonstrates the change in the number of students who graduated from open education high schools

between, 2000 and 2015. According to this, the number of students that graduated from open education high school between 2000 and 2015 underwent much fluctuation. The most striking issue in the number of graduates over the years is the decrease in the number of graduates in 2009. The basic reason for this is four-year education being mandatory for students who were enrolled in open education high schools in 2006, and the educational period for all students being increased to four years for all students starting from 2009-2010 period, including those who transferred into open education high schools. The number that increases as a result of the gradual transition in the number of students that could not get the required credits for graduation with the amendment of the curriculum, lead to a decrease in the number of graduates in 2009 (Eğitim-Bir-Sen, 2016). After 2009 there was a gradual increase in the number of graduates, while there were 111 thousand graduates in 2014, this number doubled to 221 thousand in 2015.

Despite the fact that the rights of people with disabilities are guaranteed at the national and international regulation level, people with disabilities suffer from alienation, discrimination and social exclusion in various forms and at various levels (Barnes, 2002). It is well known that, despite all legal regulations, disabled children under 18 in particular may not fully benefit from their educational rights and experience various challenges in terms of access to quality education. The most up to date data related to the total population of people with disabilities in Turkey is the data from the 2011 Population and Housing Research of TÜİK. According to the data of this research, the rate of the population with at least one disability (seeing, hearing, speaking, walking, descending and ascending from stairs, carrying holding something, learning difficulties compared to peers etc) (aged 3 and above) is 6.9% (TÜİK, 2011). This is not a rate that can be underestimated. Taking into account the fact that access to education refers to the process in which individuals having fundamentally different characteristics and requirements can access existing education opportunities in an equal and fair manner without any discrimination, indicators related to the level of access and participation in education for disabled children under 18 is important. In addition, children with special talents who have higher than average mental skills are also considered as individuals in need of special education. However, due to the fact that the rate of individuals with disabilities in society is higher, when discussing the subject of special education it is individuals with disabilities that first come to mind.

When we look at the policies and programs related to the education of individuals that require special education in the world, there are different practices in place related to different type and level of disability. Within this scope, there are various special education practices geared towards supporting disabled people in Turkey. One of these applications is the special education schools that are tailored according to individuals different disability types (hearing, seeing etc.) In addition to this, for students whose conditions require being educated in a separate classroom at the preschool, elementary education and

secondary education levels, there are special education classes that are created with special tools, equipment and education materials taking into account the type of disability, educational performances and characteristics and other e widespread practices in special education.

Another special education practice is inclusive education. The inclusive education platform which is applied based on the understanding that special education is not only providing children with environments that are suitable for their disabilities, but also educating them in an environment that is most suitable for them and their needs by removing restrictions, is highlighted as the most widespread special education type in our country. The least restrictive education environment for an individual even if he/she is disabled is an environment in which he/she can be together with his/her family and peers and where his/her educational requirements are satisfied in the best possible way. By means of inclusive education which is based on the least restrictive educational environment possible, individuals who are in need of special education receive the education they need meanwhile also having all their most natural needs being met such as being appreciated, liked and valued, as they are able to share the same social environment as their peers without any disabilities.

The education of disabled children in Turkey is covered under the scope of special education, and these children are defined in the regulations and practices as "individuals who are in need of special education" (Decree Law on Special Education, 1997). Within this scope, first the data related to the number of students receiving special education in elementary and secondary schools between 2010 and 2016 was analyzed. After that, the change in the number and rates of individuals who require special education and receive inclusive education in special environments was examined and the change in the number of students in special education classes in elementary education and their share among the total number of students in special elementary education, were analyzed in detail. Finally, indicators related to the Science and Art Centers (BİLSEM), which have been serving in Turkey since 2004 under the

Table A.6.1 Number of students receiving special education in Preschool, elementary and secondary school by year (2010-2016)

	Preschool			Primary education			Secondary education			Total formal special education		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
2010	727	424	303	125,729	53,023	72,706	14,792	9,613	5,179	141,248	63,060	78,188
2011	890	516	374	179,664	110,236	69,428	18,959	12,122	6,837	199,513	122,874	76,639
2012	1,006	564	442	194,462	119,335	75,127	25,181	15,975	9,206	220,649	135,874	84,775
2013	1,225	747	478	203,775	125,511	78,264	37,716	23,900	13,816	242,716	150,158	92,558
2014	1,935	1,239	696	215,577	133,151	82,426	41,770	26,476	15,294	259,282	160,866	98,416
2015	2,409	1,568	841	231,541	143,657	87,884	54,539	34,262	20,277	288,489	179,487	109,002
2016	2,736	1,797	939	247,207	154,690	92,517	56,262	35,606	20,656	306,205	192,093	114,112

Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years and updated by the authors

scope of informal education geared towards children with special skills, who fall under the scope of special education as expressed above, were examined.

Table A.6.1 shows the number of female and male students receiving a private school education in preschool, elementary and secondary schools between 2010 and 2016. Whereas the total number of students who received special training in 2010 in various levels was around 141 thousand, there was a regular increase in this number over the years and in 2016, the total number of students who receive special education increased twofold to 306 thousand. This change in the number of students who receive special education over the years is positive in the sense that it demonstrates the increase in access and participate in education of individuals in need of special education. When considering the number of students in various levels, it can be seen that the number of students receiving special preschool education is quite lower compared to other levels. The basic reason for this, as previously discussed, is the low schooling rate in preschool education, the fact that preschool education is not under the mandatory education scope and that a certain fee is requested from families for preschool education in public schools.

The fact that the number of students who receive special education in elementary school is higher compared to other levels means that individuals who are in need of special education mainly shift to special education at the elementary school level. Together with this, the fact that the number of students who receive special education in secondary schools is quite lower compared to those in elementary schools demonstrates that a significant

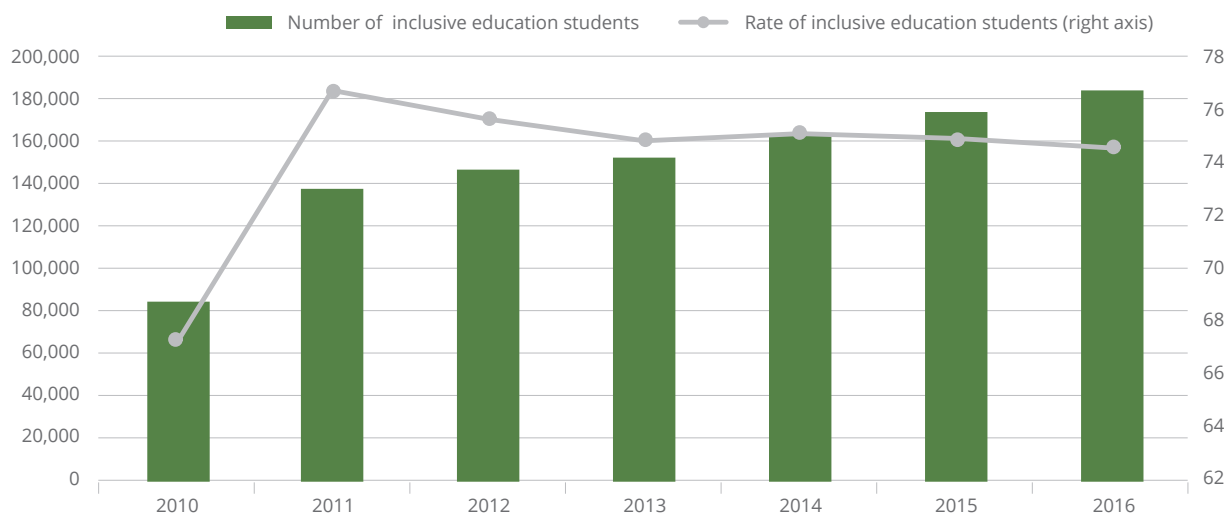
portion of children who receive special education leave the special education system once they are at secondary education age.

Table A.6.1 shows that there is a gender inequality in access to special education looking at the number of female and male students who receive special education in preschool, elementary and secondary education levels. The fact that the number of male students receiving special education in all education levels is higher than the number of female students demonstrates that females are more disadvantaged compared to males in regards to access to special education.

The change in the number and share of students who receive elementary inclusive education from 2010 to 2016, is shown in Figure A.6.2. From 2010 to 2016, the rate of students, in need of special education and who received inclusive education, increased from 67% to 75%, and the number of students who received inclusive education increased from 84,580 to 184,362. This data demonstrates an increase in the rates of access to education over time of individuals who require special education.

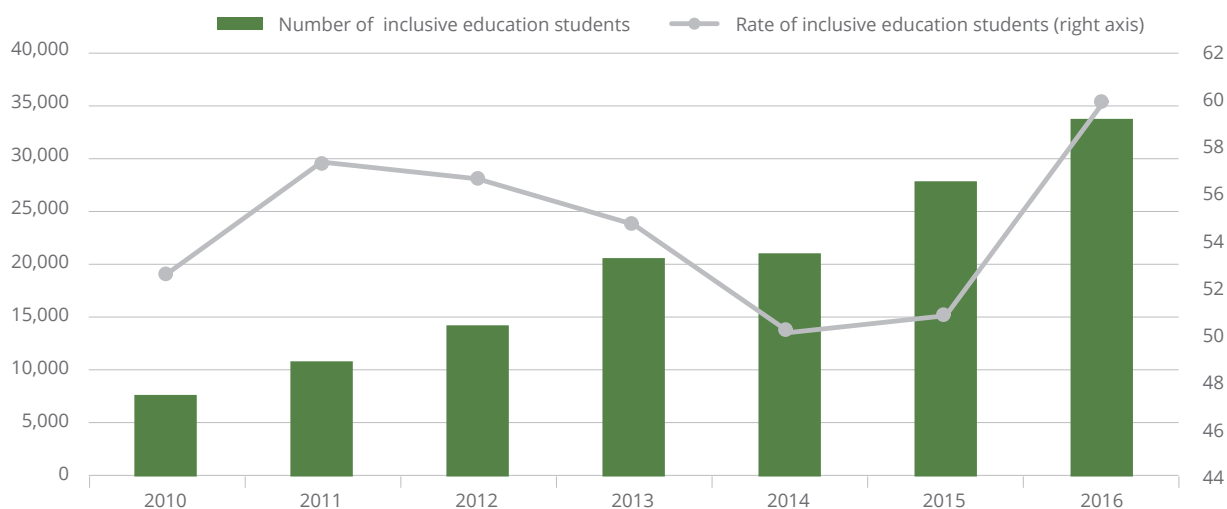
The change in the number and rate of students who receive inclusive education at the secondary level between 2010 and 2016 is shown in A.6.3. According to the figure, the rate of students who receive inclusive education among 7,775 students who receive special education in secondary schools in 2010 was 53%, and in 2016, the number of students who received special education in secondary education increased by 4.3 to 33,658, and the rate of students who receive inclusive education reached 60%.

Figure A.6.2 Trends in the number and rate of students who receive inclusive education at the elementary level (%) (2010-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years and updated by the authors.

Figure A.6.3 Trends in the number and rate of students who receive inclusive education at the secondary level (%) (2010-2016)

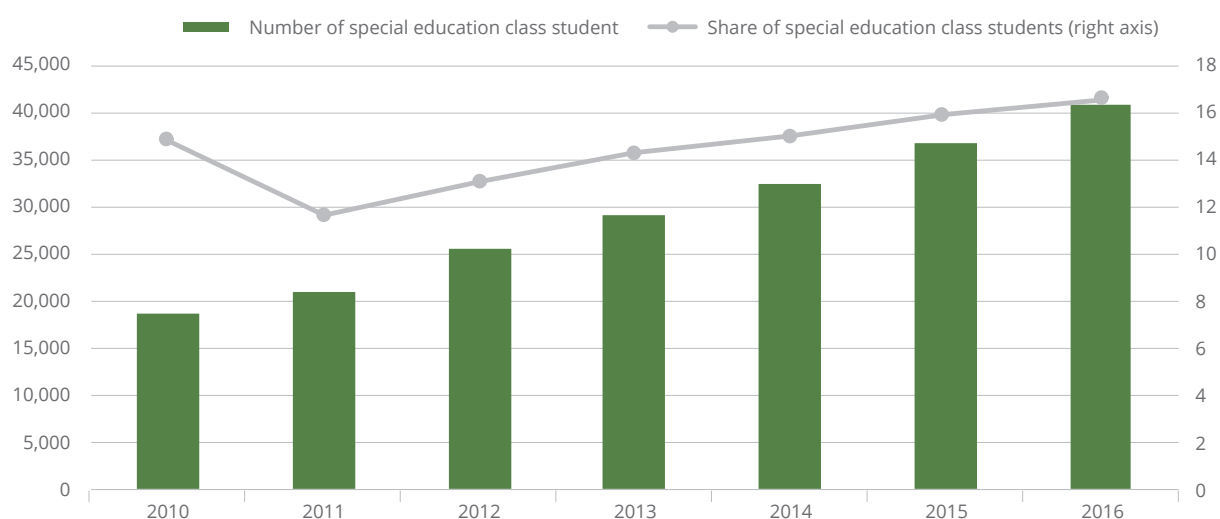


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years and updated by the authors.

Figure A.6.4 demonstrates the number of students in elementary private education classes and the rate among the total number of students receiving elementary special education between 2010 and 2016. According to this, it can be seen that there is a regular increase in the number of students who receive education in elementary special education classes between 2010-2016. Whereas the number of students in special education classes in 2010 was 18 thousand, this increased to 41 thousand in 2016. The share of special education class students among the

total number of students in elementary special education, increased to around 17% compared to previous years in 2016. At this point, both the increase in the number of special education class students and also the increase in the rate of students in special education classes among the total number of students receiving special education, are quite positive in the sense that they demonstrate that some obstacles have been removed as before the participation of children with disabilities was at a level where they could not receive full inclusive access to education.

Figure A.6.4 Trends in the number of students in special education classes in elementary education and their share of the total number of students in elementary special education (%) (2010-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years and updated by the authors.

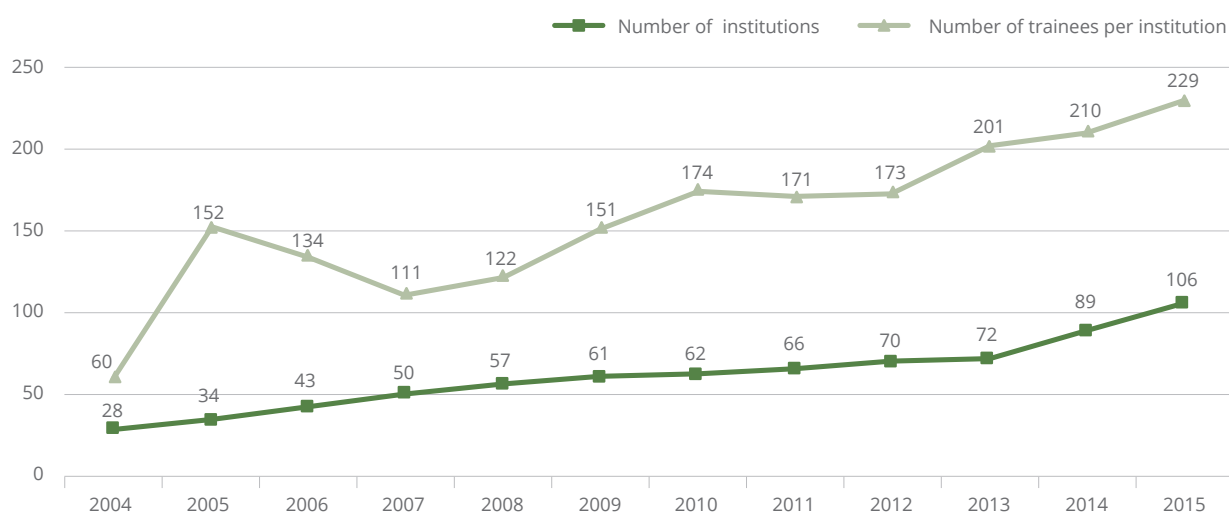
Science and Art Centers

It was underlined above that the education of children with special skills and higher than normal mental capabilities is also included under the scope of special education. As a matter of fact, it has been demonstrated by various researches that students with special skills have different educational needs and for this reason, in addition to normal education curricula, these students need alternative learning environments that will further support their interests and capabilities (Fiedler, Lang and Wibebrenner, 2002). In all societies that do not ignore the contribution that individuals with special skills make in the development of society, different educational models have been developed and implemented in the education of such individuals. Within this scope, informal educational institutions have been providing services under the name of Science and Art Centers (BILSEM) for the education of children with special skills, though this was a late step in Turkey. BILSEM's are independent institutions that were opened to enable students with special skills at preschool, primary school, middle school and high school ages (painting, music and general mental capability) to become more aware of their individual capabilities so as not to hinder their education in formal educational institutions and to enable them use their capacities at the highest level.

In these centers, students are taken into educational programs that are organized in the fields of adaptation, support education, raising awareness of individual capabilities, developing special skills and project production/ management (MONE, 2016). Science and art centers, which were first opened in 1996 and which provide a differentiated education program beyond the education given in ordinary schools in order to help students understand their own operations and enable them to contribute to themselves and in society, have been providing services with 106 BILSEMs in 80 provinces in 2016. It is considered that indicators related to BILSEMs are important in terms of providing a regular education model geared towards the education of students with special skills.

Figure A.6.5 shows the change in the number of BILSEM institutions and the number of trainees per institution between 2005 and 2015. According to this, the number of BILSEM institutions, which was 24 in 2004, increased gradually over the years and reached 106 in 2015. Whereas the number of trainees per institution was 60 in 2004, the number of trainees increased to 229 per institution in 2016. The increase in the number of institutions and in the number of trainees per institution, demonstrates that there has been a significant increase in access to education for individuals with superior or special capabilities.

Figure A.6.5 Trends in the number of Science and Art Center institutions and of trainees per institution (2004-2015)

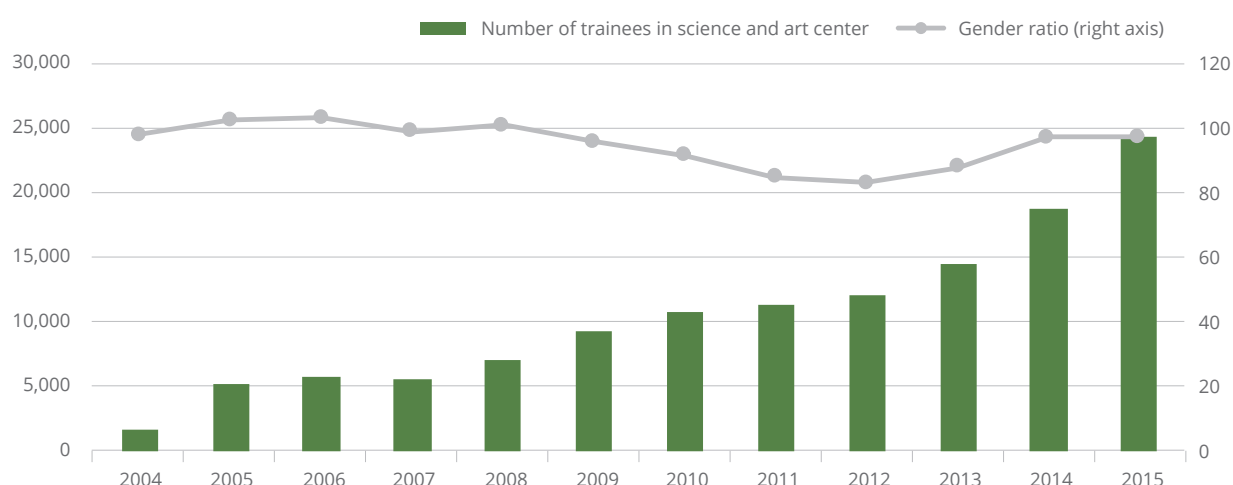


Source: Compiled using MONE statistics published in various years.

Figure A.6.6 shows the change in the number of BilSEM trainees and gender rates between the 2015 and 2016 educational terms. According to this, there is a gradual increase in the number of BilSEM trainees over the years. In BilSEM, where a total of 1676 students with superior or special skills are being education, the total number of trainees in 2015-2016 increased to a total of 24 thousand

291. Whereas there were 98 female students for every 100 students being educated in BilSEMs in 2004, the number of female trainees decreased to 83 in 2012. In the 2015-2016 educational term, 97 female trainees for every 100 male students were being educated in BilSEMs. These developments demonstrate that significant progress has been made towards ensuring gender equality.

Figure A.6.6 Trends in the number of trainees in science and art centers and gender rates (2004-2015)



Source: Compiled using MONE statistics published in various years.

Note: Information on the number of trainees in Special Information Education Institution is given starting from the end of each educational term.

Significant developments have occurred in recent years in the schooling rates of age groups under the scope of mandatory education in Turkey. In particular the fact that the schooling rate of female students in all age groups is at almost the same level as male students is important in the sense that it demonstrates that the status quo against female students has been gradually diminishing. The net schooling rates for both female and male students in age groups 6-9 and 10-13 in 2016, increased to 99% (see Figure A.1.1), which is above OECD averages. The net schooling rate, which was 67% in the 2011-2012 education term in secondary education, reached 83% in 2016 with a rapid increase following the inclusion of secondary education under the scope of mandatory education. Whereas these developments experienced in the schooling rate in secondary education is promising, these rates are still under OECD country averages. One of the reasons that the schooling rate in secondary education is still below the expectations despite its increase is the inequality between regions. In particular, the fact that the schooling rate in secondary education in 17 provinces most of which are located in East and South East Anatolia regions is below 80% is among the most important reasons for the inability to reach the targeted schooling rate (see Figure A.1.3)

Another striking issue in relation to schooling rates is the fact that the gross schooling rates in middle school and secondary levels is above 100% (see Figure A.1.7 and Figure A.1.9). The gross schooling rate may also increase to 100% as the students outside the theoretical age group such as students who start school early or late or who repeat classes are also taken into account in calculating the gross schooling rate (UNESCO, 2016). The fact that in the 4+4+4 period the standard age for starting primary school was adjusted as 66 months in 2012 and it became possible to postpone the school start date for children older than 66 months just by having a medical report without even having requests from parents or the teacher or their evaluation, and that the school starting age was discussed as 60 months in public for a long period of time, there was a boost in the number of students who started primary school at the beginning of the 2012-2013 educational term compared to previous years (Çelik et al. 2013). These students started middle school at the beginning of 2016. The gross schooling rates were above 100% as a result of such reasons as the increase in the number of students and class repetition in secondary education.

Another point that needs to be evaluated in terms of the schooling rate is the fact that the schooling rate is quite low at the preschool stage. The OECD Program for International Student Assessment (PISA) 2015 data demonstrates that students who receive minimum 2 years of education during the preschool period among students age 15 are more successful compared to others (OECD, 2017b). This demonstrates the importance of preschool education in school success. However, in our country, the net schooling rate for age 5 preschool education in 2016 was at the level of 70%, remaining far behind the level of 95%, which is the OECD country average. The most important reason that the preschool schooling rate is lower compared to other education levels is that preschool education is outside the mandatory education scope. The Ministry of education and the government have expressed their targets to cover preschool education under the scope of mandatory education and increase the schooling rates. In its 2015-2019 Strategic Plan, MoNE aimed to increase the rate of those receiving a preschool education for at least one year among grade 1 students to 92% in

2019 (MONE, 2015). In addition to this, in the Middle Term Program that covers the period 2017-2019, it was expressed that preschool education will no longer be considered under the scope of mandatory education (Ministry of Development, 2016).

One of the basic indicators used in identifying the level of access and participation in an education system is the number of students. The total number of students, which was around 10 million 790 thousand in 1990 in all levels, increased to 17 million 319 thousand in 2016 with a continuous increase with the effect of mandatory education practices. The most striking point in the number of students in elementary education in 2016 is the decrease in the number of students in primary school levels and the increase in the number of students at the middle school level. Whereas the number of students in primary school was 5 million 360 thousand in 2015, this decreased to 4 million 970 thousand, a drop of 400 thousand. Whereas the number of students in middle school was 5 million 211 thousand in 2015, this increased by 300 thousand to 5 million 519 thousand in 2016 (see Figure A.2.2). The reason for this situation that occurred in 2016 in the number of students in primary and middle schools is the significant increase in the number of students newly enrolled in primary school in the 2012-2013 educational term as a result of the obligation to start primary school with the 4+4+4 educational reform that entered into force in the term in question. As a matter of fact, the number of students who were newly enrolled in primary school in the 2012-2013 educational term increased by 600 thousand compared to the previous year. Due to the fact that students who started primary school in that period graduated from primary school in 2016 and shifted to middle school, this change observed in the number of primary and middle school students was experienced in 2016.

It can be seen that important developments have happened particularly in recent years in terms of the number of female and male students and gender rates (see Figure A.2.3) Whereas 83 females as opposed to 100 males were included in the education system in 2002 in the education levels covered under mandatory education, this rate increased to 93 in 2016. The national and international projects carried out by the Ministry particularly following 2003 were important in addition to the mandatory education practices in the increase of gender rates (Eğitim-Bir Sen, 2016; Gümüş and Gümüş, 2013). Whereas the difference between the number of female students and male students in the educational system in 2002 was 1 million 245 thousand, this difference decreased by half in 2016 to 600 thousand (see Figure A.2.3). Despite the significant increase observed in the gender rate, it can be seen that the number of female students have not yet reached the number of male students and a gender balance has not been fully achieved in the overall educational system. In particular in 2012 when the 4+4+4 practice was launched at the secondary education level, there were 69 female students as for every 100 males students, this rate significantly increased in the following years, reaching 90 in 2016. It can be seen that the equality of males and females could not be ensured in particular at the secondary education level. The reason for this is the fact that the schooling rate of female students is low in some disadvantageous regions. However, the more important thing is that as it was discussed in Indicator B.1, females graduate faster and at a higher rate compared to males. As it was shown in Figure B.1.2, when we calculate which percentage of students who were enrolled in the secondary education system 4 years ago who graduated, we see that 73% of the males and 93% of the females graduate. Furthermore, pursuant to the 12-year mandatory education, students who can not graduate are not excluded from the system, but directed to open education high schools. For these reasons, the number of male students is higher than the number of female students.

One of the most important indicators that determines participation in education and the changes to occur in the higher education levels is the students that are newly included in the educational system. When looked at over the years, the number of students who are newly enrolled in primary schools in Turkey is around 1 million 250 thousand annually on average. Whereas a significant increase is observed in the number of new enrollments in the periods when mandatory education in elementary school started, this figure returned to the level of averages in the following years. The number of new enrollments which was around 471 thousand in 1990 in secondary education, increased to 1 million 40 thousand in 2016 (see Figure A.2.6). The most striking issue in relation to new enrollment rates by school type in secondary education is the fact that, despite the number of newly enrolled students in general high schools being higher compared to students enrolled in vocational high schools up until 2011, the number of students newly enrolled in vocational high schools passed general high schools after 2011. For example, whereas the number of newly enrolled students in general high schools in 2014 was around 471 thousand, this number was around 737 thousand in vocational high schools. In 2016, 480 thousand new students were enrolled in general high schools, whereas this number was around 559 thousand in vocational high schools (see Figure A.2.8). The reason for this is that vocational education was supported by the Justice and Development Party (AK Party) governments in the 2000s, and the direction towards vocational education significantly increased as the problem of coefficients was resolved in 2010 (Özer, Çavuşoğlu and Gür, 2011). Other important factors that increased the number of enrollments in vocational high schools were the opening of Imam Hatip middle schools and the abolishment of the coefficient practice for Imam Hatip high schools, which lead to a rapid increase in the number of Imam Hatip schools and students, which were included under vocational education statistics, after 2012. Another important issue was that following the school transformations and with the TEOG placement system, all students started to be placed in schools centrally. In this process, more successful students were placed in school types that were under the scope of general high school. 30 or 34 quota was allocated per branch in schools that were under the scope of general high schools. Students who were not enrolled in general high schools were placed in vocational high schools and Imam Hatip high schools which are covered under the vocational education statistics. The quota allocated per branch in these schools is higher compared to those under the scope of general high schools.

With the increase of new enrollment rates in vocational high schools, the rate of students in vocational high schools compared to the total number of students, which was 37% in 2000, increased to 47% in 2016 (see Figure A.3.2). Excluding the open education students, 54% of the students in 2016 continued in vocational education and 46 % changed to academic education (see Figure A.3.4). When considering the OECD Country averages for students directed towards vocational and academic education, it can be seen that 58% received academic education and 42% received vocational education (see Figure A.3.5) Moreover, OECD data shows the opposite, increasing the vocational education rate and trend in Turkey. The example of Germany was given for many years in Turkey for improving vocational education, and a cliché was used which stated “the vocational education in Germany was 65%, and the academic education was 35%” However, according to OECD data, participation in academic education in Germany for 2015 was 66%, and this number was 34% for vocational education. This data makes it necessary to review the widespread perception of vocational education in Turkey, as well as the policies developed based on these perceptions.

In the gender rates of students newly enrolled in secondary education, the situation which was in favor of males particularly in vocational high schools, has been ongoing. The situation is not in favor of female students in general high schools. The number of newly enrolled female students was 109 for every 100 male students who were enrolled in general high schools in 2016. Only 79 female students were enrolled for every 100 male students in vocational high schools (See Figure A.2.9). When looked at on the basis of provinces, the schooling rate among female and male students in secondary education has significantly increased in all provinces in recent years. It can be seen that the schooling rates of females in 2006 is very low and there was a significant increase in favor of female students in 2016, which was mostly in provinces located in East Anatolia and the South East Anatolia Regions (see Figure A.2.10). Besides, the fact that the number of female students who are being educated in science high schools, social sciences high schools and Imam Hatip high schools is higher than male students is another striking issue within the context of gender (see Figure A.3.6, Figure A.3.7 and Figure A.3.9)

When we examine the indicators related to the status of private education institutions, it can be seen that there is no significant change in the total number of students from 1990 to 2002 (see Figure A.4.1). Whereas the number of students in all levels of private educational institutions in 2003 was around 233 thousand, this increased to 1 million 205 thousand in 2016. The most striking issue in the change experienced in the total number of students in private education institutions is that the total number of students which was 824 thousand in 2014 reached 1 million 174 thousand with an increase of 43% in 2015. One of the basic reasons for this increase observed in the number of students in all levels in private educational institutions is the private school incentive provided to private school students after the 2014-2015 educational term. On the other hand, when considered from the point of levels, it can be seen that the change seen between 2014 and 2015 has mostly occurred at the secondary education level. The reason for this increase is the fact that some private courses which have been providing informal education up until 2014 were converted into basic high schools, which lead to many secondary education students transitioning into these schools.

Whereas the rate of students in private educational institutions relative to the total number of students was 1.45% in 1990, this increased to 1.86% with a slight increase in 2003. The rate of private education which had a rapid increase trend after 2003, increased to 3.99% in 2013. The most significant increase observed in the rate of students in private educational institutions in the total number of students, was in 2014 with 4.69% when the private courses were transformed into private high schools. The rate which increased to 6.68% in 2015 continued to increase reaching 7% in 2016. The student rate in private education institutions changes as result of policies applied by countries for providing education through private institutions. According to OECD 2015 data, it is striking that the students rates in private high schools in particular are quite high in many countries (see Figure A.4.5) However, despite the significant increase in the number of institutions and student rates in private schools in recent years, the rate of students in private high schools is at the same level as private elementary education. This demonstrates that the rate of private elementary students was very low in past years.

In 2015 when some private courses were transformed into basic high schools, 17% of the standard high school students were in 9th grade, 8% were in 10th grade, 17% were in 11th grade and 58% were 12th grade students, and in 2016, the rate of 9th grade students decreased to 14% and the rate of 10th grade students increased to 20%. Whereas 21% of students in basic high schools

were 11th grade students, the rate of students in 12th grade decreased to 45%. Despite the fact that under Article 51 of the Private Educational Institutions Regulation of the Ministry of National Education dated 20/03/2012 No. 28239 it was indicated that the number of students registered at each class level shall not exceed 40% of the total quota, the rate of 12th grade students was 58% in 2015 and 45% in 2016. It is considered that this situation arises from the perception that basic high schools are more advantageous compared to other high schools in transitioning to higher education. Another striking issue in relation to basic high schools is that the number of students in these institutions increases despite the decrease in the number of institutions. The possible reason for this decrease in the number of basic high schools is the withdrawal of some small actors from the market and the transformation of some into private schools. On the other hand, it is estimated that some basic high schools have become more institutionalized and their capacities and number of students increased as a result. According to the regulations, basic high schools will be closed by the end of the 2018-2019 educational term. However, in a period when the social demand for basic high schools increased and the institutionalization of high schools improved, a resistance can be seen in the closure process of these high schools, which is an advantage for the exams for the transition to higher education.

The number of students in open education middle schools and open education high schools, under the scope of distance education models in Turkey, which have been developed in order to increase access and participation in the education of people outside the formal education system for various reasons, has significantly increased in recent years. Whereas the total number of students in open education middle schools and high schools was 600 thousand in 2000, this number reached 1.9 million in total in 2015. In 2016, it decreased by 450 thousand to 1.4 million compared to 2015. Whereas 140 thousand of these students are open education middle school students, 1.3 million of them are open education high school students. Due to the fact that, in accordance with the nature of open education, students included in the system remain inside the system passively and it is possible to register in three different periods to open education in an educational term, the number of students within the system may change continuously. It can be seen that, according to the 2016-2017 second term the National Education Statistics, number of students in open education high schools increased more, reaching 1.75 million (MONE, 2017b). Therefore, the decrease observed in the number of students in 2016 shall not be interpreted to the effect that enrollment in open education decreased. When we look at the gender rates of students enrolled in open education, whereas there were 48 females for every 100 male students enrolled in open education high schools in 2000, this rate stably increased until 2011, reaching 86 female students for every 100 male students in 2011. The gender rate which decreased after 2012, was at 72.5% in 2016. When evaluated in general, the number of students in open education high schools increased due to those who could not be placed into any formal education institutions in the TEOG placement were then placed to open education high school, and also due to those who repeated a class for two consecutive terms for such reasons as absenteeism or failure to meet minimum academic requirements, were shifted to these high schools. In more concrete terms, in 2017 the TEOG placement process placed around 270 thousand students into open high schools either due to lack of preference or in ability to meet the requirements for placement in their preferred schools (Çelik et al, 2017). Apparent this data demonstrates that the open education high schools function as a "warehouse" in particular for students who are less successful (Eğitim-Bir-Sen, 2016).

Taking into account the fact that access to education means the concept wherein individuals having fundamentally different characteristics and requirements benefit from the existing educational opportunities equally and fairly without being subject to any discrimination, the indicators related to the level of access and participation in the education of children with superior skills and mental capabilities, or those under the age of 18 who have disabilities, are highly important. What is more important than creating services in a country is to make access to such services easier. In particular presenting services geared towards the disabled in their own social environments increases the efficiency of these services (Genc, 2015). In this sense, particularly the developments in the education of disabled children in recent years are quite positive. Whereas the total number of students who received special education in 2010 at various levels was around 141 thousand, this number demonstrated a regular increase over the years and the total number of students who received special education in 2016 increased more than double to 306 thousand. A high majority of these students who receive special education are at the elementary level, and the number of students at the secondary education level is relatively lower. This demonstrates that a significant majority of students who receive special education in elementary education find themselves outside the system once they reach their secondary education age. On the other hand, the fact that the number of male students receiving special education across all education levels is higher than the number of female students demonstrates that females are more disadvantaged compared to males in access to special education (see Table A.6.1). The rate of inclusive education, which is being implemented on the basis of the understanding that special education shall be provided in the least restrictive environments possible for children, in a suitable manner that meets their needs rather than providing education in environments in accordance with their disabilities, is significantly high with 75%. Together with this, the fact that the rate of children with disabilities who receive education in special education classes has increased compared to previous years (see Figure A.6.4) is a positive development in the sense that it demonstrates that certain obstacles to the participation of these children in education system have been removed.

Despite the fact that there are various opinions on whether students with special capabilities shall be educated in the same class as their peers or in a special class, it is generally accepted that these students need a program that is qualitatively different than the normal curricula and that their needs for special learning should be met (Chan, 2001; van Tassel-Baska and Stambaugh, 2005). Within this scope, students with special skills in Turkey need a differentiated education curricula beyond the education given in normal schools in order to understand and fulfill their own potential and contribute to society. BILSEMs have been established in order to provide programs that have been differentiated according to the capabilities of these students. It is considered that indicators related to BILSEM are important in terms of providing a regular education model specially geared towards the education of students with special skills. Total number of high or special talented students in BILSEM was 1676 in 2004, that reached 24 thousands in 2016. The increase in the number of institutions and in the number of trainees per institution, demonstrates that there is a significant increase in the access of individuals with superior or special capabilities to education. More effort is required from the Ministry of education in ensuring that the infrastructure in place including physical hardware and personnel is in line with the increasing number of students. Otherwise, BILSEMs will not be able to fully fulfill the functions expected from them.

- Taking into account the contribution of early childhood education in the educational activities of the individuals in future periods, effective policies should be developed in order to leverage the schooling rates in preschool education. Within this scope, it shall be possible to open preschool educational institutions of differentiated type. In addition to this, since a certain fee is asked from families for education in these school and preschool education is not covered by mandatory education, in particular the socio-economically disadvantaged families could experience problems in sending their children to preschool. Therefore, ensuring that children of disadvantaged families in particular continue preschool education shall be adopted as a priority policy and no fee shall be charged for these children.
- Schooling rates at the elementary and secondary level do vary much between regions and genders. However, there are important differences at the secondary education level in terms of gender and regions. For that reason, projects should be implemented which will enable the female students in the East and South East Anatolia regions, where the schooling rates are particularly low, to participate in education with the target of increasing schooling rates in secondary education.
- In recent years, the government and the ministry emphasized that vocational education is vitally important and increased the new enrolment rates in vocational education by orienting children towards vocational education, and also significantly leveraged the level of vocational high schools among the total number of high schools. Currently the rate of vocational high schools in Turkey is far above the OECD average. Germany has for long been shown in Turkey as the model country with the highest attention dedicated to vocational education. Today the rate of vocational high schools in the 15-19 age group in Germany is 34%. Based on this data the policies in place to direct students towards vocational education by force shall be stopped.
- It shall be ensured that open education high schools are no longer used as a warehouse for unsuccessful students at mandatory education age and they shall mainly serve people outside the educational age. Within this framework, investments shall be facilitated towards increasing face to face education capacities in provinces where the young population is high.
- There have been significant developments in the number of students in particular towards improving the education of children in need of special education. However, the current situation demonstrates that a high majority of students who receive special education in elementary education fall outside the system once they reach secondary education ages. For that reason, it is considered as a necessity to take precautions that will ensure the participation of students of secondary education age, who are in need of special education, to secondary education. Within this scope, developing vocational secondary education programs geared towards these individuals could contribute in the resolution of this problem.
- Students with special skills have a more advanced cognitive capacity compared to their peers and thus they need broader educational opportunities which are not normally provided in regular education settings. For that reason, it is important that BILSEMs, which provide services under the scope of informal education, are further developed and disseminated. In addition to this, different models should be developed such as separate schools and resource room for these students. Moreover, the most important issue that should not be ignored within this framework is the necessity that different models shall be developed and implemented towards meeting the different needs of each individual in the education system.

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CHAPTER



EDUCATION OUTPUTS

INDICATOR B1	Education Level of Population
INDICATOR B2	TIMSS 2015 Performance of Students
INDICATOR B3	PISA 2015 Performance of Students
INDICATOR B4	Average Success Status in Higher Education Transition Exam (YGS) and Bachelor Placement Examinations (LYS)
INDICATOR B5	Higher Education Transition Rates and Higher Education Quotas
INDICATOR B6	The Impact of Education in The Labour Market
CHAPTER B	Highlights
CHAPTER B	Recommendations

Seeing what type of skills and competencies the individuals graduating from the education system have is very important for evaluating the efficiency and performance of the system. Thus the positive aspects and problematic areas of the education system can be determined. In addition, this data can indicate the extent to which the qualifications and skills of individuals have developed and to what degree they are prepared for business life. Within this framework, this section will discuss the graduation rate outside the higher education level, the academic success of students, placement rates in higher education and access to labour markets. In addition to that, data related to the performance of the education system, namely on how well students are learning, will be analyzed within the framework of data on Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA), which compares higher education transition data and international data. Before discussing the Indicators and data in this section, it will be beneficial to explain certain basic concepts.

The education level of the population is considered as an important Indicator of the level of development and wealth of a country. This report shows the rates of those with at least a high school diploma, and those who have a minimum of a high school education amongst the total population. The graduation rate from secondary education, expresses the status of graduation of a student who enters to secondary education system. Here the calculation of the graduation rate is an approximate calculation. Figures were obtained by calculating the number of students enrolled in high school, to the number of graduates among same students (Eğitim-Bir-Sen, 2016).

The Trends in International Mathematics and Science Study (TIMSS) has been carried out every four years by the International Association for the Evaluation of Educational Assessment (IEA). This research, which comparatively measures the mathematics and science performance of students in 8th grade, was first implemented in 1995.

Following 2011, the mathematics and science performances of 4th grade students were measured (MONE, 2016a). TIMSS aims to measure the knowledge and skills of students within the framework of the mathematics and science curricula (IEA, 2015a). TIMSS gives the opportunity to evaluate the level of development over time in the science and mathematics performances of 4th and 8th grade students, and also to compare the performances of students among different countries. Furthermore, data was obtained through student questionnaires, home questionnaires, teacher questionnaires, school questionnaires and curricula questionnaires in TIMSS survey. In the student survey, questions are asked which involve detailed data related to the student's home and school life, basic demographic data, school environment, self-perception and attitudes towards learning mathematics and science. Home surveys focus on early learning and are being implemented to the parents of 4th grade students. The teacher survey collects data related to education, professional development, teaching experience, the scope of the curricula and the teaching methods and tools being used. School principals are asked about the demographic characteristics of students, school resources, programs applied and the learning environment. The curricula survey asks for information from countries related

to the mathematics and science curricula content (IEA, 2015b). TIMSS evaluates the success of students according to various variables and data and presents highly rich data related to the performance of the education system.

The Programme for International Student Assessment (PISA) which is organized every three years, has been launched by the Organization of Economic Cooperation and Development (OECD) in 2000. PISA aims at measuring the extent to which students aged 15 have the skills and knowledge required for daily life. To put it more clearly, PISA aims to determine whether, in the field of science, reading and math literacy, students have the important level of skills and knowledge needed in real life by measuring their capabilities in using their skills and knowledge, to establish logic and make analysis while interpreting and solving the problems they encounter. With PISA, it is possible to see the development of the education system performance over time and the place of the education system among countries participating in the study (MONE, 2016b; OECD, 2016). As in the case of TIMSS, student, teacher and school surveys are also implemented in PISA. The school survey is filled out by the school principal and includes general information about the school and questions regarding the characteristics of teachers and the school climate. Questions are directed towards the teacher concerning occupational development, experience, demographic characteristics and teaching practices. In the student survey, data is focused on the socio-economic characteristics of the students, his/her approach towards life, way of studying in courses, the learning environment in the school, and data related to opinions on courses. PISA evaluates the success of students on the axis of different variables and data, providing rich data in relation to the performance of the education system.

Other concepts that shall be explained before shifting to the Indicators are the labor force, employment and unemployment rates that are frequently seen in the statistics of the Turkish Statistical Institute (TÜİK). The labor force population is obtained by adding up the unemployed and the employed among those of an employable age. Individuals between 15-64 are considered as part of the employable age group. The labor participation rate is obtained by dividing the sum of the unemployed and the employed by the employable population, and multiplying the result by 100. The employment rate is found by dividing the population currently employed by the population of employable individuals, and multiplying the result by 100. The unemployment rate is obtained by dividing the unemployed population by the total population at the employment age, and multiplying the result by 100 (Gür, Çelik, Kurt and Yurdakul, 2017).

Some changes have occurred in recent years in the calculation of labour statistics. The first of these is that TÜİK began using statistical calculation methods recommended by Eurostat within the framework of processes carried out towards full harmonization with the European Union in February 2014. In the calculations related to employment and job seeking in Turkey, the criteria of the last "4 weeks" is now being used as job seeking criteria for Eurostat instead of the last "3 months" (TÜİK, 2017). Another important development that affects statistics related to unemployment is the establishment of Metropolitan Municipalities in 14 provinces with the Law No. 6360 enacted in 2012. Because, together with this law, the legal personality of villages and sub-districts were abolished and converted into neighborhoods. In other words, with this law, the rural areas in provinces that were transformed into metropolitans, are now handled under the scope of the metropolitan.

The educational level of the population in a country is considered as an indicator of the level of development in both economic and academic terms of that country. Under this indicator, data related to high school graduates at starting with the young and middle aged population was handled and analyzed. Within this framework, the change over time of the rate and number of individuals with at least a high school diploma in different age and gender groups in Turkey, is shown on a regional basis.

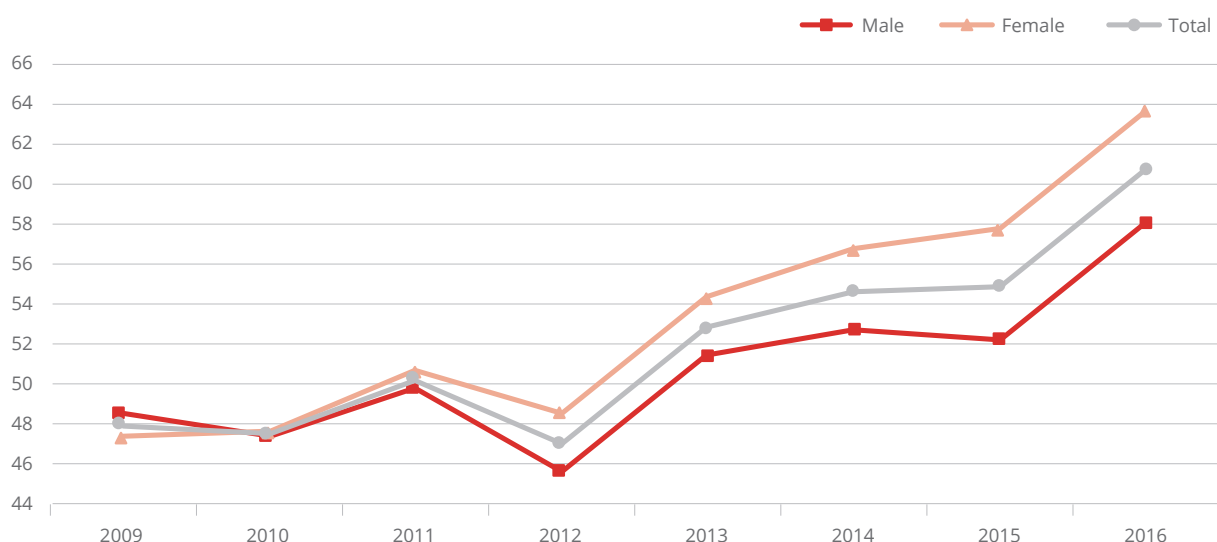
The change in the rate of individuals with least a high school education in the 18-21 age group by gender between 2009 and 2016 is shown in Figure B.1.1. When Figure B.1.1 is examined, the rate of individuals with at least a high school education in the 18-21 age group was around 48% both among men and women in 2009, and there was a significant increase in 2016 reaching 63.6% for females and 58% for males, and 60,2% in total.

Together with this, the proportional difference between genders increased over the years in favor of women. The reason for this increase is that as the high schools were

taken under the scope of mandatory education after 2012, the first graduates finished in 2016. In the coming years, it is expected that the increase trend in graduation rates will continue.

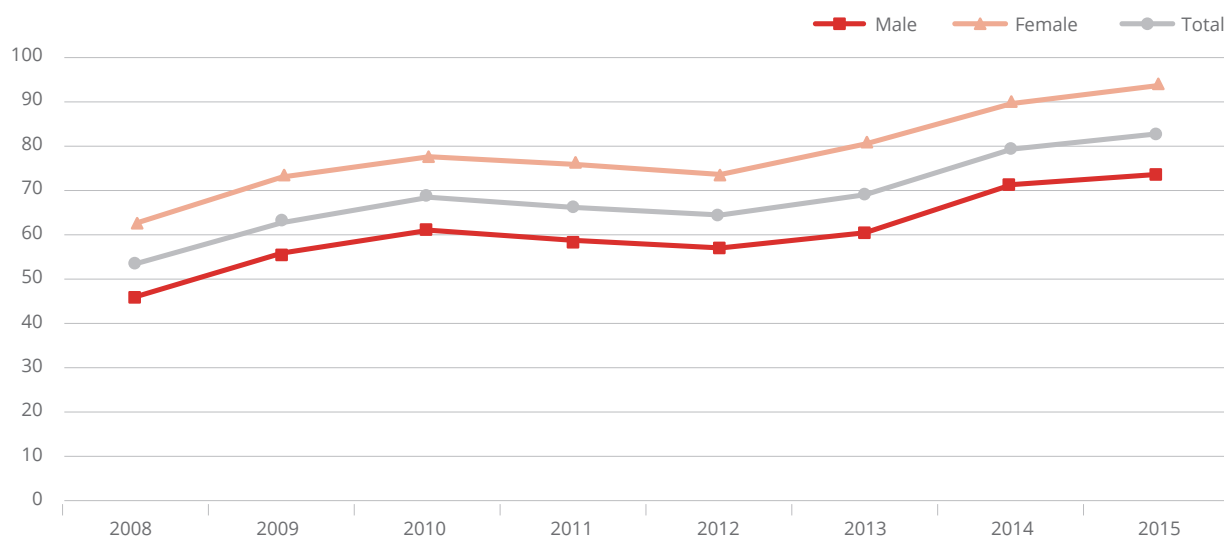
Changes in the secondary education graduation rates by gender between 2008 and 2015 are shown in B.1.2. Here those who graduate among students that entered the secondary education system 4 years ago were calculated and the rates of graduation from secondary education were obtained. According to this, it was seen that there was a significant progress for both males and females in the graduation rates from 2008 to 2015. Whereas 53% of students who started their secondary education in the 2005-2006 educational term graduated in the 2008-2009 educational term, this rate increased to 85% in the 2015-2016 educational term for those who started secondary education in 2012-2013. When considered on the basis of gender, the graduation rate of of males who started secondary education 4 years ago between 2008-2015 increased from 46% to 73%, and for females from 63% to 94%. Here it can be clearly seen that the graduation rates

Figure B.1.1 Trends in the rate of graduates with minimum a high school education in the 18-21 age group by gender (%) (2009-2016)



Source: Compiled using the TÜİK National Education Statistics and Address Based Population Registry System database.

Figure B.1.2 Trends in the secondary education graduation levels by gender (2008-2015)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.
 Note: Not included in the calculation of open education high school students.

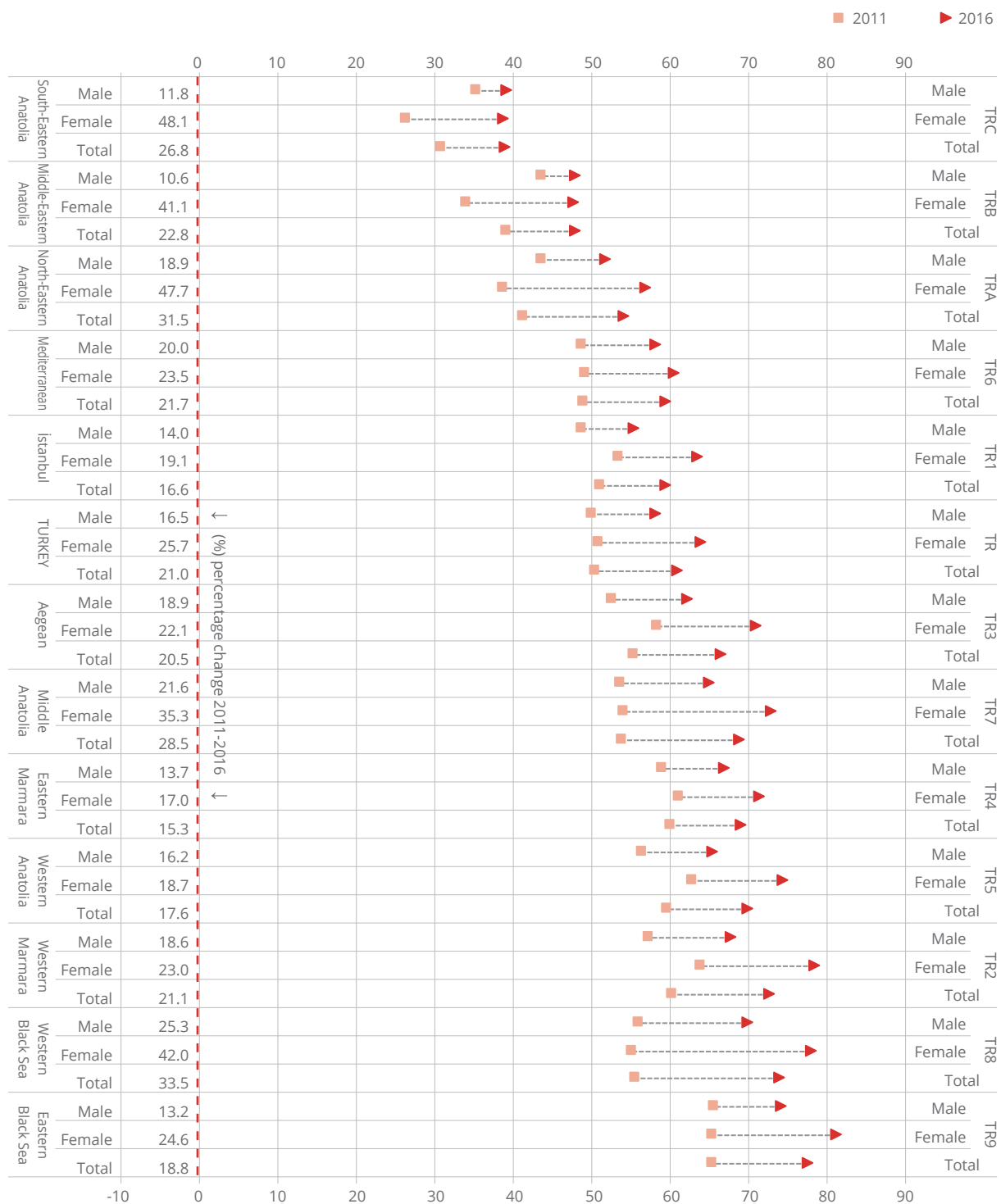
of female students who started secondary education is higher compared to males. Whereas almost every female who starts secondary education graduates, around $\frac{3}{4}$ of males graduate. The fact that girls graduate at a higher rate compared to boys is also valid for other OECD countries (Eğitim-Bir-Sen, 2016).

Figure B.1.3 provides the rates of individuals with at least a high school education in the 18-21 age group by region and gender in 2011 and 2016. According to data from 2016, in regions where individuals have at least a high school education rates are the highest among the 18-21 age group in the Eastern Black Sea (77.4%), Western Black Sea (73.7%) and Eastern Marmara (72.6%) regions where the rate of people with at least a high school diploma in the 18-21 age group are South Eastern Anatolia (38.9%), Central Eastern Anatolia (47.7%) and North Eastern Anatolia (54%). Although the rate of individuals with at least a high school diploma in the 18-21 age group is almost the same in South Eastern and Central Eastern Anatolia regions, it can be seen that the rate of women in all other regions is higher. When we look at the Turkish average, the rate of women with at least a high school education in the 18-21 age group is higher compared to males (see Figure B.1.1 and Figure B.1.3).

In all regions, the rate of individuals with at least a high school education among both females and males between 2011 and 2016 increased. Moreover, the increase in the rate of (at least) high school graduate was more rapid for women. In particular, this proportional difference is more common in South East, Central East and North Eastern Anatolia regions. When examined according to the regions, the highest proportional increase in at least high school graduates in the 18-21 age group between 2011 and 2016 was in the Western Black Sea (33.5%) and North Eastern Anatolia (31.5%) regions. As opposed to this, the least increase was seen in Eastern Marmara (15.3%) and İstanbul (16.6%) regions. In other words, the rate of graduates increased rapidly in regions where the rate of individuals with at least a high school education was already low in the past. As it was indicated before, since high schools were taken under the scope of mandatory education, it is estimated that these rates will gradually increase in coming years and the proportional differences between genders will decrease.

The rate of at least high school graduates in the young (18-21) and middle age (40-44) population across regions and genders in 2016 is given in Figure B.1.4. When we examine the rates of at least high school graduates in the young

Figure B.1.3 Rate of graduates with minimum high school education in the 18-21 age group by region and gender (%) (2011-2016)

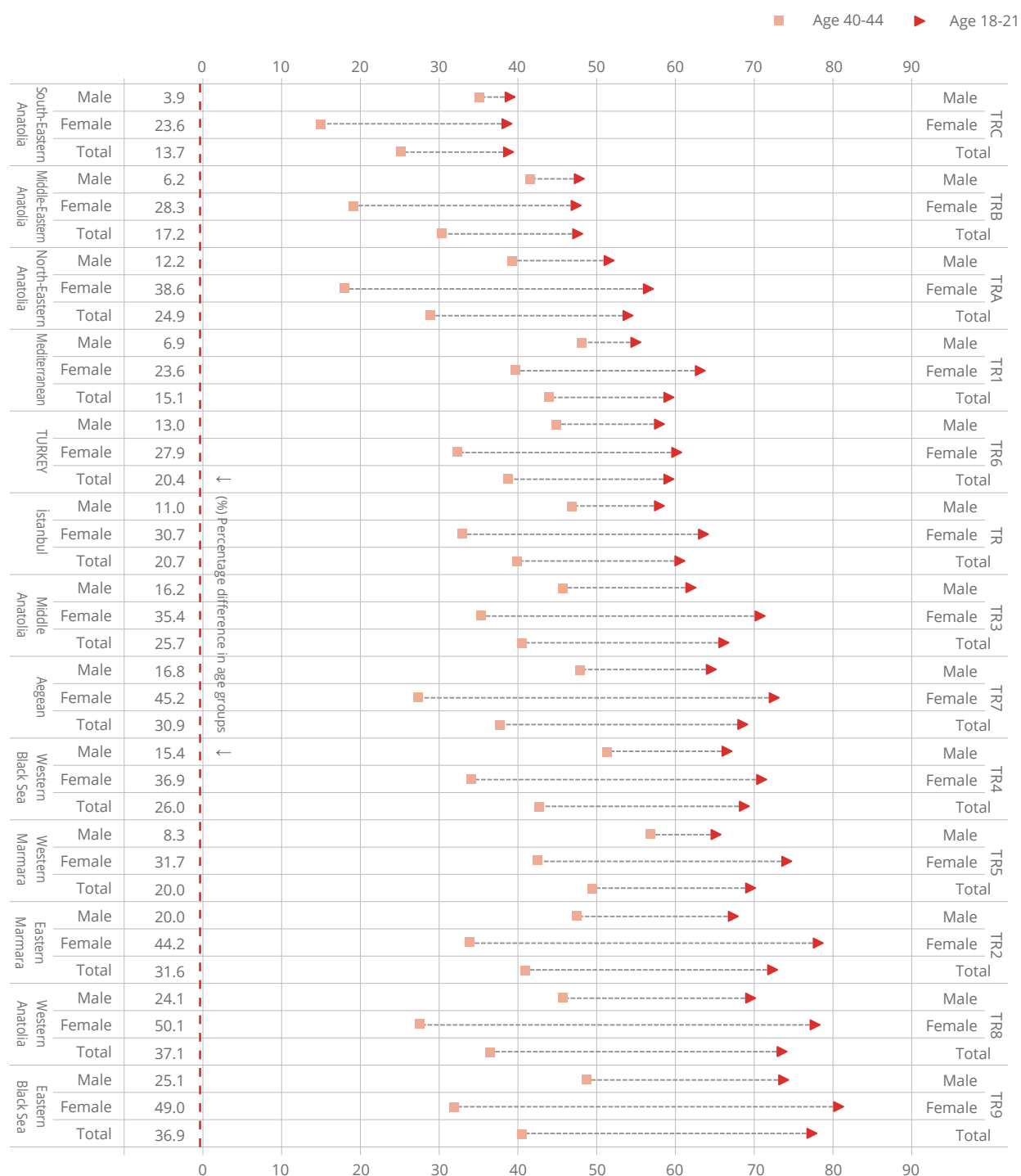


Source: Compiled using the TÜİK National Education Statistics and Address Based Population Registry System database.

(age 18-21) and middle age (age 40-44) groups, we see that the rate of individuals with at least a high school education among youth is quite high compared to the rate of being at least a high school graduate in the middle age group.

There is a difference of 20.4% between these two groups overall in Turkey. When compared in terms of gender, the difference between young and middle age women who are at least high school graduates is 27.9%, and the difference

Figure B.1.4 Rates of graduates with minimum high school education among youth (18-21) and the middle age (40-44) population by region and gender (%) (2016)

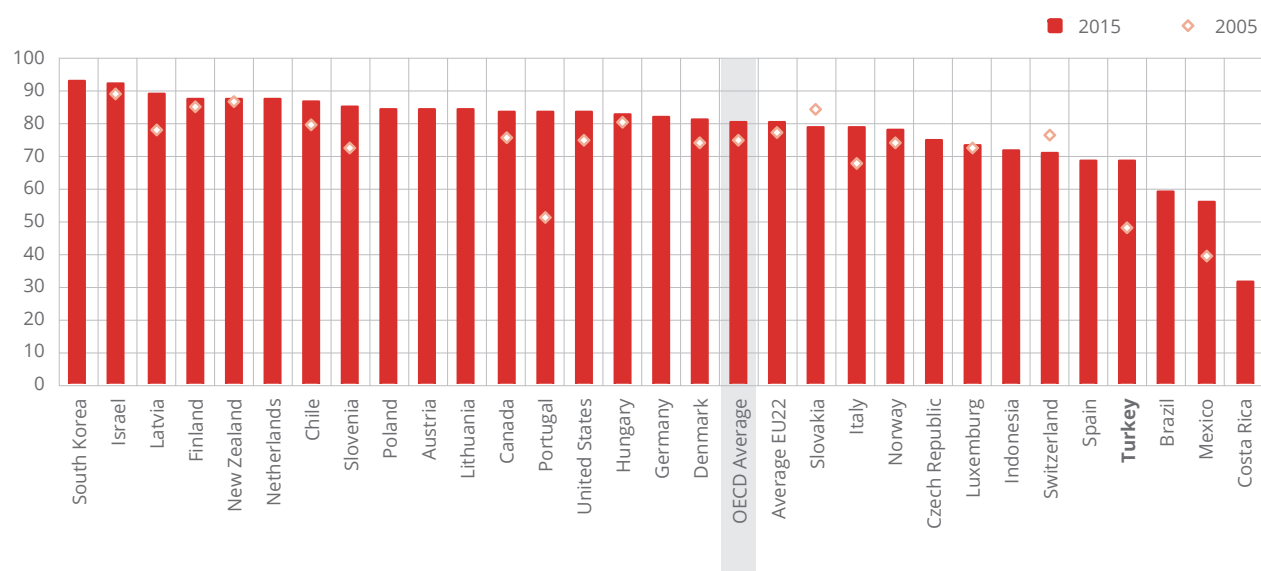


Source: Compiled using the TÜİK National Education Statistics and Address Based Population Registry System database.

between rates of middle aged men was 13%. When the middle age and young populations are compared, the rate of being at least a high school graduate among the young population has increased more rapidly in women

than men. The change in the rate of at least high school graduates among women is higher than the change in the rate of men in terms of young and middle age groups in all regions.

Figure B.1.5 Trends in first-time upper secondary graduation rates for students younger than 25 (2005-2015)



Source: OECD (2017a)

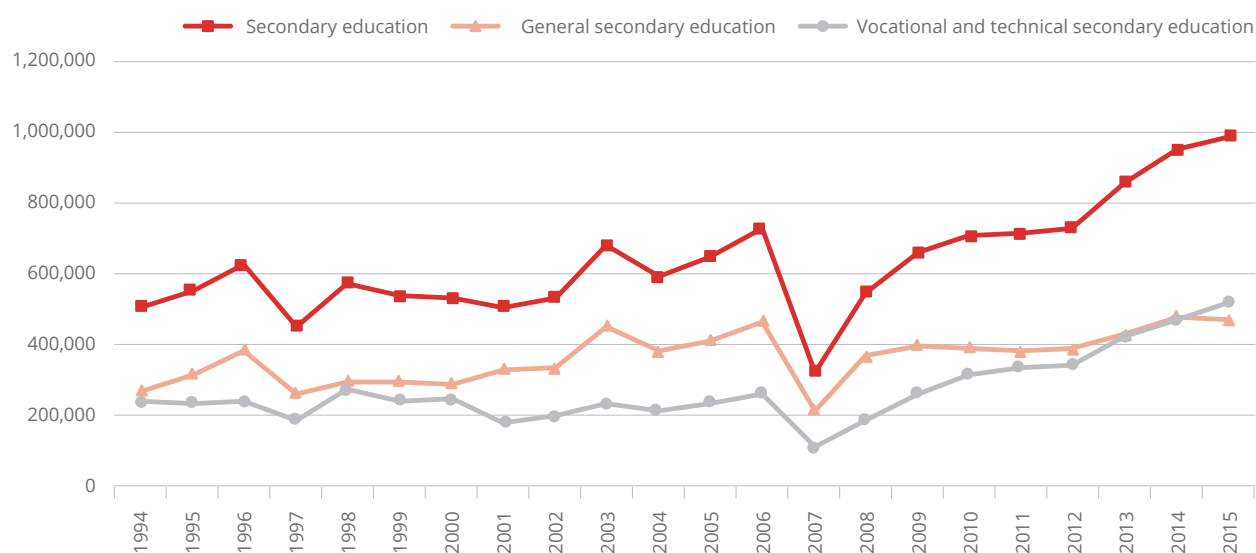
In particular, this proportional difference in favor of women is higher in Western Anatolia, Eastern Black Sea, Aegean and Eastern Marmara regions. When examined according to the regions, regions where the difference between rates of at least high school graduates among the young (18-21) and middle age (40-44) population are the highest are respectively Western Anatolia (37.1%), Eastern Black Sea (36.9%), Western Marmara (31.7%) and Eastern Marmara (31.6%). In contrast, regions where the difference is the lowest are South-Eastern Anatolia (13.7%), Mediterranean (15.1%) and Central East Anatolia (17.2%)

On the other hand, the inequality against women in all regions in terms of the rate of at least high school graduates in the middle age group, is close to equality in the young generation in South East and Central East Anatolia regions, and is developing in favor of women in all other regions.

This is an indicator that women have more space in educational life compared to men. The situation of being at least a high school graduate as expressed here covers the condition of being both high school and associate`s for the 18-21 age group. For the 40-44 age group, this includes high school, associate`s, undergraduate and graduate education. Taking these situations into account, it is revealed that there is a significant increase in the young population and in particular in the young women population in terms of access to education.

The change in the rate of secondary education graduates for individuals under 25 years old in some OECD countries between the years 2005-2015 is shown in B.1.5. Whereas the graduation rates from secondary education in almost all countries have increased between 2005-2015, rates of graduation from secondary education decreased in

Figure B.1.6 Trends in number of graduate students according to types of school (1994-2015)



Source: Compiled using statistics published by MONE in various years.

Sweden and Slovakia. Among the reference years, the rates of graduation in Portugal, Turkey and Mexico have rapidly increased. Despite the fact that in Turkey the graduation rate from secondary education in the population under 25 increased from 47.6% to 67.8% between 2005-2015, this is significantly low compared to the OECD average (80.2%).

The change in the number of graduate students in secondary education by school type between 1994 and 2015 is shown in Figure B.1.6. Despite the fact that the number of those graduates from secondary education institutions fluctuated between 1994-2015, it reached 988 thousand from 507 thousand with an increase of around two folds. Since the high schools were extended to 4 years in 2007, the number of graduates highly decreased and in that year only the students who received preparatory education beforehand could graduate. When we look at the number of graduates in general and vocational and

technical secondary education graduates, we see that despite the fluctuating course of the number of persons who graduated from general secondary education, the number of graduates which was 270 thousand in 1994-2005, reached 472 thousand in the 2015-2016 educational term.

The number of vocational and technical secondary education graduates, which was 238 thousand in 1994, reached 515 thousand in the 2015-2016 educational term. After 2008, the number of vocational and technical secondary education graduates has grown stably and in 2015-2016 educational term there were more graduates compared to general secondary education. The most fundamental reason for this is the policies implemented by MONE to increase the student capacity in vocational and technical education.

TIMSS measures the science and mathematical skills of grade 4 and 8 students. Turkey has participated at the grade 8 level in 1999 and 2007 and at grades 4 and 8 in 2011 and 2015 in the TIMSS research that was conducted every four years since 1995. 260 schools and 6,456 students in 4th grade and 238 schools and 6,079 students in 8th grade overall in Turkey participated in TIMSS 2015

research (MONE, 2016b). 57 countries and 7 comparison countries participated in the TIMSS 2015 research. Besides, more than 312 thousand in grade 4 from 49 of 57 countries, and more than 270 thousand in grade 8 from 39 thereof, participated in this research (Martin, Mullis, Foy and Hooper, 2016; Mullis, Martin, Foy and Hooper, 2016)

Table B.2.1 Mathematics and science score averages by country (TIMSS 2015)

4. grade						8. grade					
Ranking	Country	Average maths scores	Ranking	Country	Average science scores	Ranking	Country	Average maths scores	Ranking	Country	Average science scores
1	Singapore	618	1	Singapore	590	1	Singapore	621	1	Singapore	597
2	Hong Kong	615	2	Republic of Korea	589	2	Republic of Korea	606	2	Japan	571
3	Republic of Korea	608	3	Japan	569	3	China-Taiwan	599	3	China-Taiwan	569
4	China-Taiwan	597	4	Russian Federation	567	4	Hong Kong SAR	594	4	Republic of Korea	556
5	Japan	593	5	Hong Kong SAR	557	5	Japan	586	5	Slovenia	551
6	Northern Ireland	570	6	China-Taiwan	555	6	Russian Federation	538	6	Hong Kong SAR	546
7	Rusya	564	7	Finland	554	7	Kazakistan	528	7	Russian Federation	544
8	Norway	549	8	Kazakistan	550	8	Canada	527	8	England	537
9	Ireland	547	9	Poland	547	9	Ireland	523	9	Kazakistan	533
10	England	546	10	United States	546	10	United States	518	10	Ireland	530
11	Fleming Region	546	11	Slovenia	543	11	England	518	11	United States	530
12	Kazakistan	544	12	Hungary	542	12	Slovenia	516	12	Hungary	527
13	Portugal	541	13	Switzerland	540	13	Hungary	514	13	Canada	526
14	America	539	14	Norway	538	14	Norway	512	14	Switzerland	522
15	Denmark	539	15	England	536	15	Latvia	511	15	Latvia	519
16	Latvia	535	16	Bulgaria	536	16	Israel	511	16	New Zealand	513
17	Finland	535	17	Czech Republic	534	17	Australia	505	17	Australia	512
18	Poland	535	18	Croatia	533	18	Switzerland	501	18	Norway	509
19	Netherlands	530	19	Ireland	529		TIMMS Scale Median	500	19	Israel	507
20	Hungary	529	20	Germany	528	19	Italy	494		TIMMS Scale Median	500
21	Czech Republic	528	21	Latvia	528	20	Malta	494	20	Italy	499
22	Bulgaria	524	22	Denmark	527	21	New Zealand	493	21	Turkey	493
23	South Cyprus	523	23	Canada	525	22	Malezya	465	22	Malta	481
24	Germany	522	24	Serbia	525	23	United Arab Emirates	465	23	United Arab Emirates	477
25	Slovenia	520	25	Australia	524	24	Turkey	458	24	Malezya	471
26	Switzerland	519	26	Slovakia	520	25	Bahrain	454	25	Bahrain	466
27	Serbia	518	27	Northern Ireland	520	26	Georgia	453	26	Qatar	457
28	Australia	517	28	Spain	518	27	Lebanon	442	27	Islamic Republic of Iran	456

Table B.2.1 Mathematics and science score averages by country (TIMSS 2015)

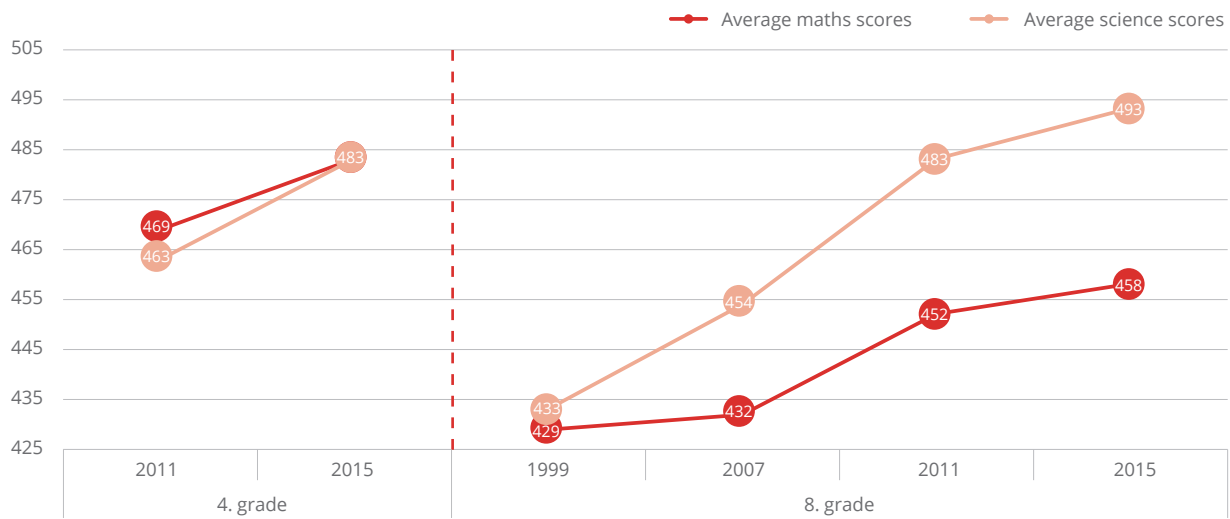
4. grade			8. grade								
Ranking	Country	Average maths scores	Ranking	Country	Average science scores	Ranking	Country	Average maths scores	Ranking	Country	Average science scores
29	Canada	511	29	Netherlands	517	28	Qatar	437	28	Thailand	456
30	Italy	507	30	Italy	516	29	Islamic Republic of Iran	436	29	Umman	455
31	Spain	505	31	Fleming Region	512	30	Thailand	431	30	Chile	454
32	Croatia	502	32	Portugal	508	31	Chile	427	31	Georgia	443
	TIMMS Scale Median	500	33	New Zealand	506	32	Umman	403	32	Jordan	426
33	Slovakia	498		TIMMS Scale Median	500	33	Kuwait	392	33	Kuwait	411
34	New Zealand	491	34	France	487	34	Egyptian	392	34	Lebanon	398
35	France	488	35	Turkey	483	35	Macedonia	391	35	Saudi Arabia	396
36	Turkey	483	36	South Cyprus	481	36	Jordan	386	36	Morocco	393
37	Georgia	463	37	Chile	478	37	Morocco	384	37	Macedonia	392
38	Chile	459	38	Bahrain	459	38	South Africa	372	38	Egyptian	371
39	United Arab Emirates	452	39	Georgia	451	39	Saudi Arabia	368	39	Saudi Arabia	358
40	Bahrain	451	40	United Arab Emirates	451						
41	Qatar	439	41	Qatar	436						
42	Iranian	431	42	Umman	431						
43	Umman	425	43	Islamic Republic of Iran	421						
44	Indonesia	397	44	Indonesia	397						
45	Jordan	388	45	Saudi Arabia	390						
46	Saudi Arabia	383	46	Morocco	352						
47	Morocco	377	47	Kuwait	337						
48	South Africa	376									
49	Kuwait	353									

Source: Compiled using IEA TIMSS 2015 data.

Mathematic and science score averages by country in TIMSS 2015 is shown in Table B.2.1. The average success of countries in TIMSS research is fixed at 500 points and calculations are made according to TIMSS scale median. According to this data, the average scores for grades 4 and 8 in both mathematics and science tests in Turkey remained below the TIMSS scale median. In country rankings, Turkey is 36 among 49 countries in terms of grade 4 mathematic scores, 35 among 47 countries in terms of science score, and 24 among 39 countries in terms of grade 8 mathematic scores and 21 among 39 countries in terms of science score. Far east countries are at the first ranks in both mathematic and science scores in grades 4 and 8, and Singapore ranks first in all classes and test types.

Math and science score averages of 4th and 8th graders in TIMSS research between 1999-2015 are given in Figure B.2.2. In the TIMSS research in which Turkey first participated in 2011 for 4th graders, the math score average was 469 and science score average was 463. In TIMSS 2015, Turkey increased its math score average 14 points at the 4th grade level, and its science score average 20 points. There was a significant increase in both math and science score averages in 8th grade classes in Turkey. Turkey's TIMSS 2015 math score average for 8th grade increased by 60 points and the science score average by 35 points compared to 1999. According to the previous TIMSS 2011 research, the math score average increased by 10 points and science score average increased by 6 points. It can be seen that both math and science score

Figure B.2.2 TIMSS math and science score averages in grades 4 and 8 over years (1999-2015)



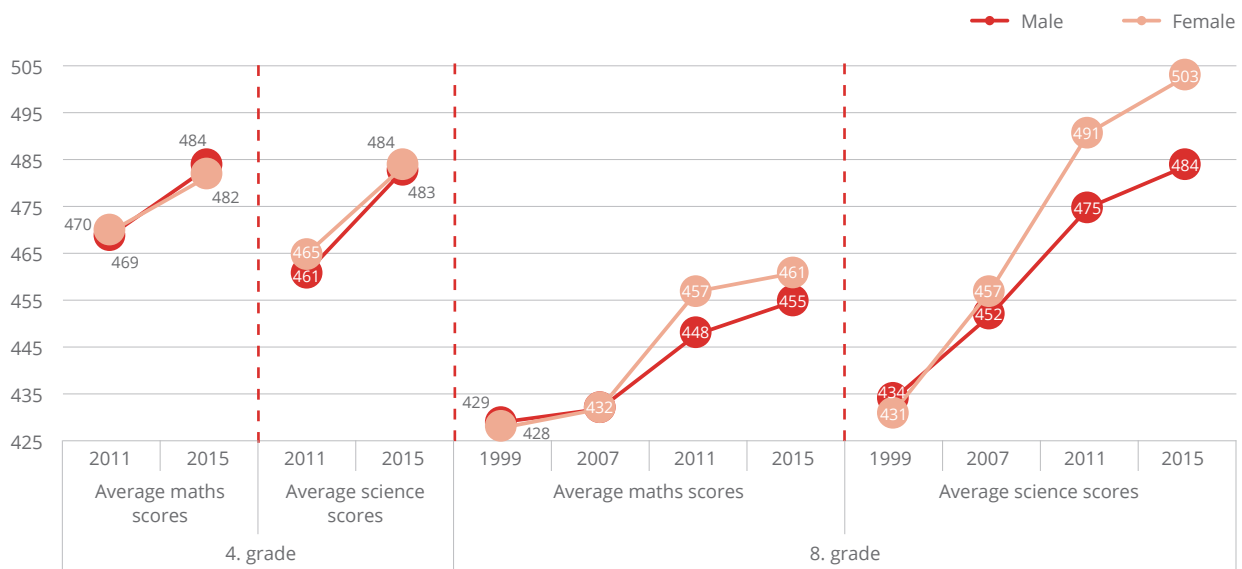
Source: Compiled using IEA TIMSS data

averages in grades 4 and 8 in TIMSS increased stably in Turkey.

The change in math and science score averages of 4th and 8th graders in the TIMSS research in which Turkey participated, is shown in Figure B.2.3 by gender. There is no significant difference between science and math scores of females and male students in 4th grade who participated in TIMSS 2011 and 2015 research from Turkey, the average

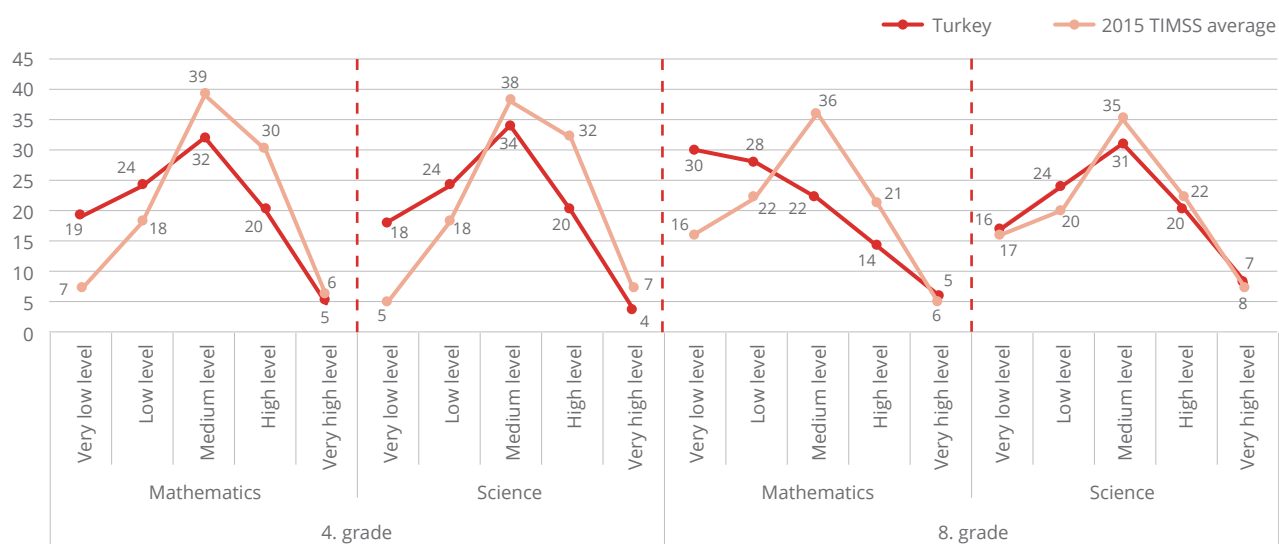
scores of both genders are almost equal. Whereas there is no significant difference between the science and math scores of female and male students who attended TIMSS 1999 and 2007 research in 8th grade, in TIMSS 2011 and 2015 research, the difference between math and science scores of males and female students who attended increased compared to past research. The difference between math score averages was 9 in TIMSS 2011 and 6 points in TIMSS 2015, and the difference between science

Figure B.2.3 Trends in TIMSS 2015 math and science score averages of grades 4 and 8 students by gender



Source: Compiled using IEA TIMSS data.

Figure B.2.4 Proportional distribution of students in TIMSS 2015 math and science fields according to areas of competence



Source: Compiled using IEA TIMSS 2015 data.

score averages was 6 in TIMSS 2011 and 19 in TIMSS 2015, in favor of girls. It can be seen that girls in 8th grade in Turkey are more successful in math and sciences branches compared to boys.

Proportional distribution of students in math and science fields by level of competency in 2015 is given in Figure B.2.4. In such types of proportional distributions, it is expected that the image looks like a normal distribution. When the distribution of students participating in TIMSS 2015 research in 4th grade from Turkey is examined, it can be seen that 25% demonstrated high and advanced performance, and 43% demonstrated low level and below low performance. In TIMSS average, the rate of students with high and advanced level is 36%, which is higher than Turkey. More importantly, the TIMSS average of those at lower level or below lower level is 26%, which is quite lower than Turkey's average. When the competencies of 4th grade students in the field of science are examined, it can be seen that 24% have demonstrated high and advanced level performance, and 44% demonstrated low level and below low level performance. The rate of 4th grade students at low level and below low level according to the

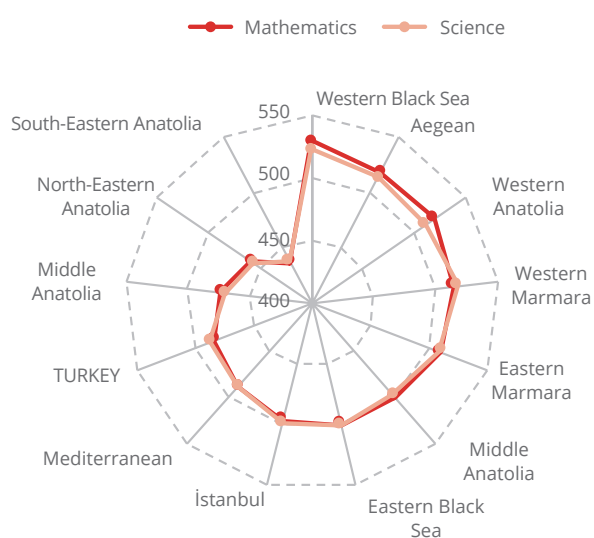
TIMSS average is 23%, and the average of students at high and advanced level is 39%.

When the distribution of students participating in TIMSS 2015 research in 8th grade from Turkey is examined by mathematics competencies, it can be seen that 20% demonstrated high and advanced performance, and 58% demonstrated low level and below low level performance. When the competencies of the same students in the field of science are examined, 28% demonstrated high and advanced level performance and 41% demonstrated low level and below low level performance.

When the TIMSS 2015 average is analyzed, the rate of students who demonstrate low level and below low level performance is 37% in math and science tests; and the rate of students demonstrating high and advanced level performance is 26% in math test and 29% in the science test.

According to this, the rate of below low level performance demonstrated by students in Turkey is quite higher compared to the TIMSS average, and the rate of

Figure B.2.5 4th grade students' math and science score averages by region (TIMSS 2015)

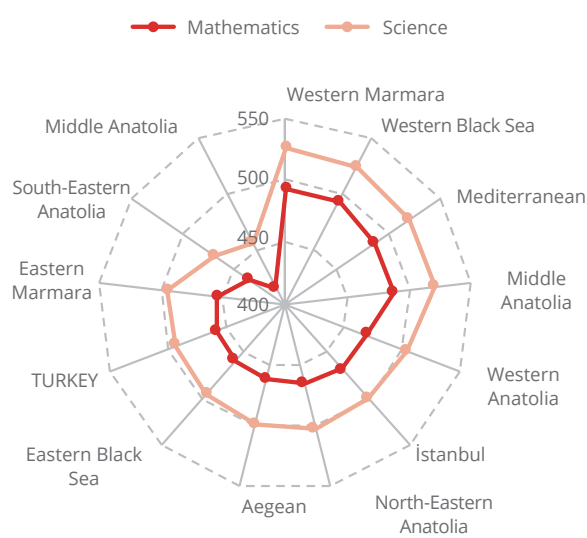


Source: Compiled using IEA TIMSS 2015 data.

demonstrating high and advanced level performance is quite low. The fact that the rate of students who demonstrate below low level performance is high demonstrates that students in Turkey continue on to senior classes without learning basic knowledge. Figure B.2.5 4th grade students' averages of math and science scores by regions (TIMSS 2015).

Averages of math and science scores by region of 4th grade students who participated in TIMSS 2015 research from Turkey are shown in Figure B.2.5. In TIMSS 2015, there are significant differences among regions in Turkey for the math and science scores of 4th graders. Averages of scores received in both math and science fields in South-Eastern Anatolia, North-Eastern Anatolia and Central East Anatolia are quite lower than Turkey's average. In Eastern Marmara, Western Marmara, Western Anatolia, Aegean and Western Black Sea regions, there is a score average above 500 points in both fields, which is the scale median of TIMSS. The most successful region in Turkey is the Western Black Sea with a score average of 530 in math and 524 in science. On the other hand, the South-Eastern Anatolia Region, which is the least successful region, scored 437 in math and 438 in science, which is 100 points

Figure B.2.6 8th grade students' math and science score averages by region (TIMSS 2015)



Source: Compiled using IEA TIMSS 2015 data.

lower than the Western Black Sea. This data demonstrates that there is a significant inequality at the 4th grade level among regions.

Averages of math and science scores by region of 8th grade students who participated in TIMSS 2015 research from Turkey are shown in Figure B.2.6. In TIMSS 2015, math and science scores of 8th graders differ among regions. The averages of scores received by 8th grade students in Central East Anatolia, South-Eastern Anatolia and Eastern Marmara regions in both fields are lower compared to Turkey's overall average and other regions. Scores received by 8th graders in the field of math are lower than the TIMSS scale median in all regions. Averages of scores received by 8th grade students in the field of science in Central Anatolia, Mediterranean, Western Black Sea and Western Marmara regions are higher than the scale median of TIMSS. According to TIMSS 2015 by region, the most successful region at the 8th grade level is Western Black Sea (math: 493 points, science: 562 points) and the least successful region is Central East Anatolia (math: 416 points and science: 456 points). This data demonstrates that there is a significant inequality at the 8th grade level among regions.

PISA is a study launched in 2000 and conducted every three years by the OECD in order to compare the success of age 15 students in science, reading and math literacy. PISA tries to measure the extent to which students are prepared to use what they have learned in real life (MONE, 2016b: OECD, 2016). Around 540 thousand students in the 15-year old age group from 72 countries participated in the PISA research held in 2015. Turkey has been participating

in the PISA research, which is conducted every three years, regularly since 2003.

Table B.3.1 demonstrates the science, reading and math score averages of countries in PISA 2015. Turkey's science, reading and math scores in PISA 2015 research are far below the OECD countries average. Turkey decreased both average scores compared to PISA 2012, and it has

Table B.3.1 Science, reading and math score averages by country (PISA 2015)

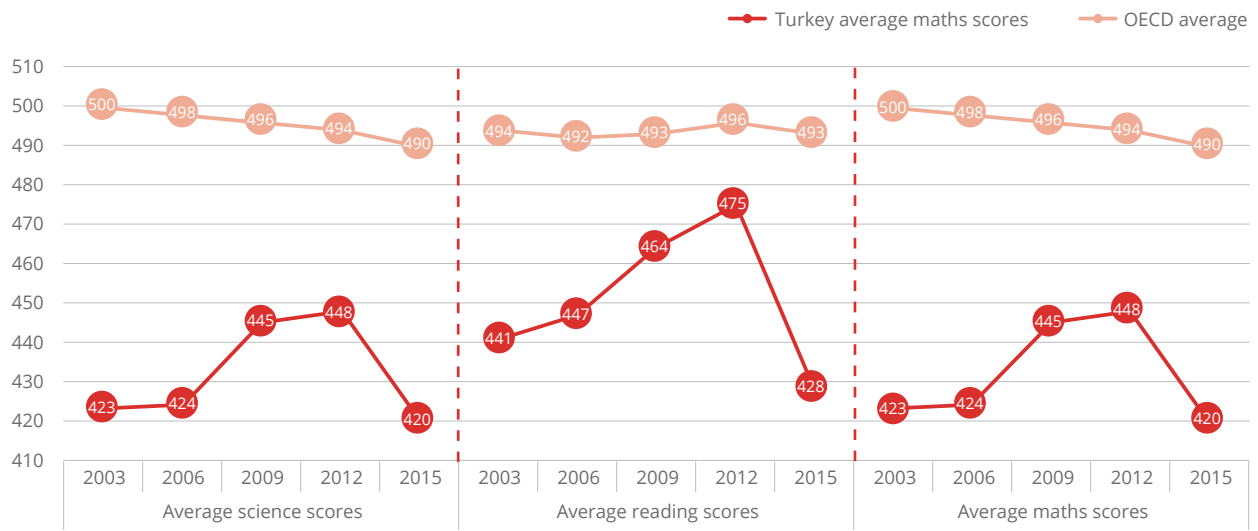
Ranking	Country	Average science scores	Country	Average reading scores	Country	Average maths scores
	OECD average	493		493		490
1	Singapore	556	Singapore	535	Singapore	564
2	Japan	538	Hong Kong (China)	527	Hong Kong (China)	548
3	Estonia	534	Canada	527	Macao (China)	544
4	China Taipei	532	Finland	526	China Taipei	542
5	Finland	531	Ireland	521	Japan	532
6	Macao (China)	529	Estonia	519	B-S-J-G (China)	531
7	Canada	528	Korea	517	Korea	524
8	Vietnam	525	Japan	516	Switzerland	521
9	Hong Kong (China)	523	Norway	513	Estonia	520
10	B-S-J-G (China)	518	New Zealand	509	Canada	516
11	Korea	516	Germany	509	Netherlands	512
12	New Zealand	513	Macao (China)	509	Denmark	511
13	Slovenia	513	Poland	506	Finland	511
14	Australia	510	Slovenia	505	Slovenia	510
15	United Kingdom	509	Netherlands	503	Belgium	507
16	Germany	509	Australia	503	Germany	506
17	Netherlands	509	Sweden	500	Poland	504
18	Switzerland	506	Denmark	500	Ireland	504
19	Ireland	503	France	499	Norway	502
20	Belgium	502	Belgium	499	Austria	497
21	Denmark	502	Portugal	498	New Zealand	495
22	Portugal	501	United Kingdom	498	Vietnam	495
23	Portugal	501	China Taipei	497	Russia	494
24	Norway	498	United States	497	Sweden	494
25	United States	496	Spain	496	Australia	494
26	Austria	495	Russia	495	France	493
27	France	495	B-S-J-G (China)	494	United Kingdom	492
28	Sweden	493	Switzerland	492	Czech Republic	492

Table B.3.1 Science, reading and math score averages by country (PISA 2015)

Ranking	Country	Average science scores	Country	Average reading scores	Country	Average maths scores
29	Czech Republic	493	Lithuania	488	Portugal	492
30	Spain	493	Czech Republic	487	Italy	490
31	Lithuania	490	Croatia	487	Iceland	488
32	Russia	487	Vietnam	487	Spain	486
33	Luxemburg	483	Austria	485	Luxemburg	486
34	Italy	481	Italy	485	Lithuania	482
35	Hungary	477	Iceland	482	Malta	479
36	Latvia	475	Luxemburg	481	Latvia	478
37	Croatia	475	Israel	479	Hungary	477
38	CABA (Argentina)	475	CABA (Argentina)	475	Slovakia	475
39	Iceland	473	Latvia	472	Israel	470
40	Israel	467	Hungary	470	United States	470
41	Malta	465	Greece	467	Croatia	464
42	Slovakia	461	Chile	459	CABA (Argentina)	456
43	Greece	455	Slovakia	453	Greece	454
44	Chile	447	Malta	447	Romania	444
45	Bulgaria	446	South Cyprus	443	Bulgaria	441
46	United Arab Emirates	437	Uruguay	437	South Cyprus	437
47	Uruguay	435	Romania	434	United Arab Emirates	427
48	Romania	435	United Arab Emirates	434	Chile	423
49	South Cyprus	433	Bulgaria	432	Turkey	420
50	Moldavia	428	Turkey	428	Moldavia	420
51	Albania	427	Costa Rica	427	Uruguay	418
52	Turkey	425	Trinidad ve Tobago	427	Montenegro	418
53	Trinidad ve Tobago	425	Montenegro	427	Trinidad ve Tobago	417
54	Thailand	421	Colombia	425	Thailand	415
55	Costa Rica	420	Mexico	423	Albania	413
56	Qatar	418	Moldavia	416	Mexico	408
57	Colombia	416	Thailand	409	Georgia	404
58	Mexico	416	Jordan	408	Qatar	402
59	Montenegro	411	Brazil	407	Costa Rica	400
60	Georgia	411	Albania	405	Lebanon	396
61	Jordan	409	Qatar	402	Colombia	390
62	Indonesia	403	Georgia	401	Peru	387
63	Brazil	401	Peru	398	Indonesia	386
64	Peru	397	Indonesia	397	Jordan	380
65	Lebanon	386	Tunisia	361	Brazil	377
66	Tunisia	386	Dominican Republic	358	Macedonia	371
67	Macedonia	384	Macedonia	352	Tunisia	367
68	Kosovo	378	Algeria	350	Kosovo	362
69	Algeria	376	Kosovo	347	Algeria	360
70	Dominican Republic	332	Lebanon	347	Dominican Republic	328

Source: Compiled using OECD PISA 2015 data.

Figure B.3.2 PISA science, reading and math score averages in Turkey and OECD countries for the years (2003-2015)



Source: Compiled using OECD PISA data.

also been ranked lower in the country ranks. In PISA 2015 research, Turkey ranked 52 in science among 70 countries, 50 in reading and 49 in math.

Science, reading and math score averages of Turkey and OECD in PISA research conducted between 2003 and 2015 are given in Figure B.3.2. The average science score which Turkey has received in the five PISA studies it has participated in up until today is below the OECD country average. Excluding PISA 2015 research, the average success of Turkey in the field of science has increased stably until PISA 2012. In PISA 2015, the average score in the field of science decreased to 425 and fell below the score of 434 which Turkey received in 2003 PISA research. Moreover, Turkey's science average score decreased to 38 in PISA 2015 compared to PISA 2012.

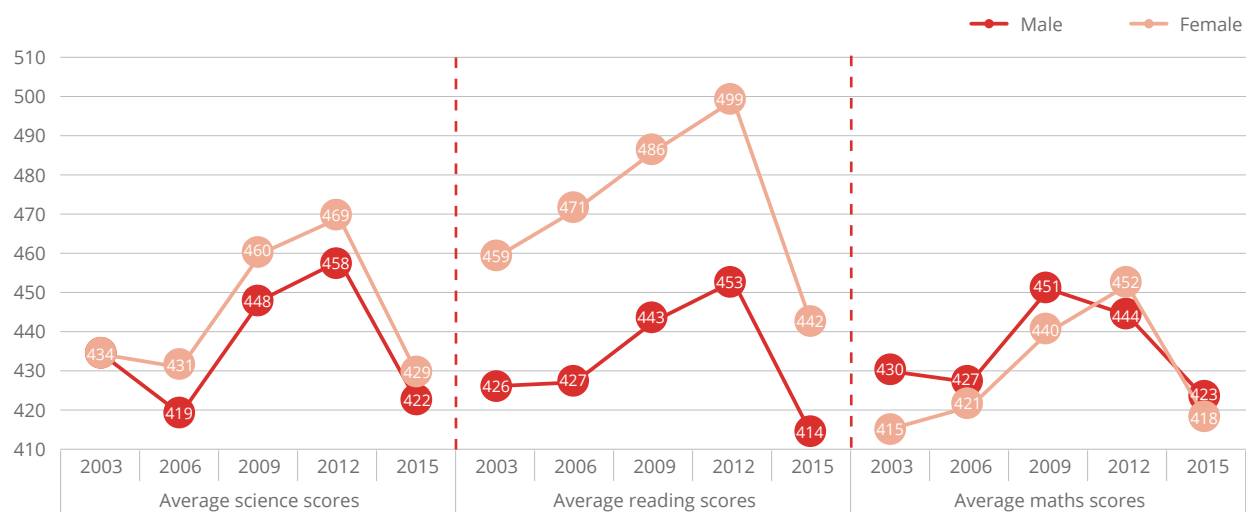
The average scores received by Turkey in PISA reading field was also below the OECD average. Turkey has stably increased its scores in the field of reading from PISA 2003

research to PISA 2012 research. However, in PISA 2015 research, the average score in reading fell far below the average score it received in PISA 2003.

Moreover, the average score Turkey had obtained reading in PISA 2015 decreased by 47 points compared to PISA 2012. In the field of Math, the average scores of Turkey increased until PISA 2012. However, there was a sharp fall in PISA 2015, and the score was 428. Also the average score in the field of math in PISA 2015 was below its score in PISA 2003. Moreover, Turkey's average scores in math in PISA 2015 decreased by 28 points compared to PISA 2012.

The change in average scores in science, reading and math by gender in Turkey in PISA research is shown in Figure B.3.3. According to this, in the 5 PISA studies which Turkey participated in, girls were more successful in science compared to boys, and the success of girls is higher compared to boys in the field of reading. For example,

Figure B.3.3 Trends in Turkey's PISA science, reading and math score averages by gender (2003-2015)

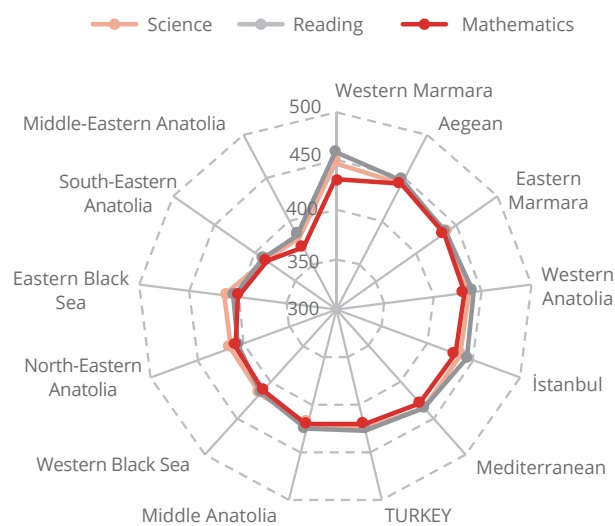


Source: Compiled using OECD PISA data.

whereas the reading score of girls in PISA 2015 was 442, the reading score of boys was 414, which is 28 points lower. In the field of math, boys tend to more successful than girls, excluding PISA 2012.

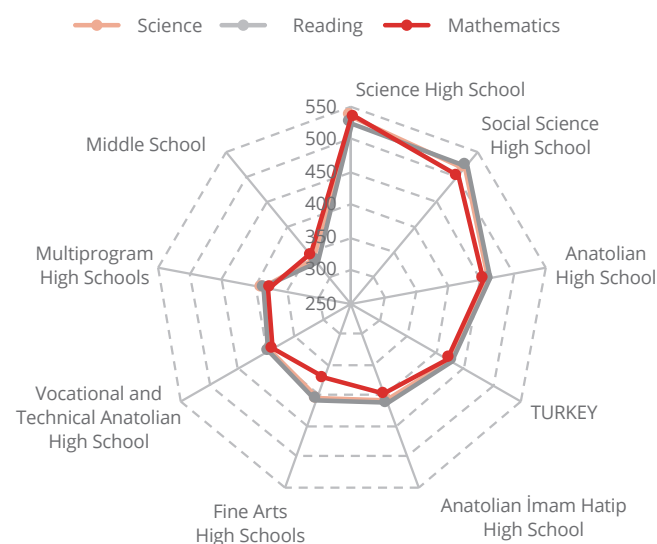
Figure B.3.4 demonstrates the science, reading and math scores according to region in PISA 2015. Central East and South-Eastern Anatolia regions have an average success scored at a lower level compared to other regions in all three areas. For example, the math score was 432 in Western Marmara and 370 in Central East Anatolia. Taking into account the fact that a difference of 30 points corresponds to an entire educational term in PISA 2015 (OECD 2016, p. 65), a difference of 62 points corresponds to the difference of two educational years. In other words, there is a significant inequality in the educational success in Turkey among regions. The Mediterranean, İstanbul, Western Anatolia, Eastern Marmara, Aegean and Western

Figure B.3.4 Science, reading and math scores by region in PISA 2015



Source: Compiled using OECD PISA 2015 data.

Figure B.3.5 Science, reading and math score averages by school type



Source: Compiled using OECD PISA 2015 data.

Marmara regions have demonstrates scores above Turkey's averages in the fields of science, reading and math. In PISA 2015 it is to be highlighted that the average scores in all three areas increase when we go from east to west of Turkey on a regional basis.

Science, reading and math score averages according to the school type of students who participated from Turkey in PISA 2015 research are given in Figure B.3.5. There are significant differences between types of schools in terms of average scores in all three fields. Whereas students of Anatolian, social sciences and science high schools have a success score above the Turkish average in the fields of science, reading and math, in particular the students of science and social sciences high schools received an average score above 500.

Success in all three fields of students from Anatolian Imam Hatip, fine arts, vocational and technical Anatolian and multi-program Anatolian high schools, remained under Turkey's average. This data demonstrates that there is a significant hierarchy between types of schools and successful students accumulate in certain types of schools and unsuccessful students accumulate in other types of schools. In other words, the difference between the point average between the most successful high school and the multi-program Anatolian high school, which is the most unsuccessful, is around 150 points in the three areas. Taking into account the fact that every 30 points correspond to an educational term in PISA 2015 (OECD, 2016 p. 65), this difference demonstrates that there is a

Figure B.3.6 Proportional distribution of students in PISA 2015 science, reading and math according to areas of competence



Source: Compiled using OECD PISA 2015 data.

significant difference of almost five educational years in academic terms between the most successful high school and the most unsuccessful school types.

The proportional distribution of Turkey and OECD country averages in the fields of science, reading and math according to the level of competency in PISA 2015, is given in Figure B.3.6.6 competency levels are identified in order to assess the performance of students in relevant fields in PISA research. Students who demonstrate success at the 1st level and below are expressed as low-success group, and students who demonstrate 5th level and above are expressed as the high performance group. According to this, rates of students who participated in PISA 2015 from Turkey and who demonstrated high performance in the fields of science, reading and math are below OECD country averages.

Whereas the rate of students in Turkey who demonstrate high level competency is 0.5% in science, 0.1% in math and 0.6% in reading, the OECD average is 7.8% in science, 7.7%

in math and 8.3% in reading. Moreover, there is no student who demonstrated performance at the 6th level, which is the highest level, in the three areas in Turkey. On the other hand, when the situation in demonstrating the lowest level performance is examined, Turkey's performance is quite high compared to the OECD average. The rate of students of level 1 and below, which is defined as the least successful group in Turkey, is 44.4% in science, 40% in reading and 51.3% in math, and the OECD average of students who scored below level 1 is 21.3% in science, 20.1% in reading and 23.4% in math.

That means, it can be seen that the rate of students in Turkey below level 2, which is defined as the basic level in science, math and reading, is quite high, and that more than half of the students in math lack even basic level skills. This data presents a very important indication on the success of the education system in Turkey and demonstrates that the students graduate from the system even without having basic skills.

AVERAGE SUCCESS STATUS IN HIGHER EDUCATION TRANSITION EXAM (YGS) AND BACHELOR PLACEMENT EXAMINATIONS (LYS)

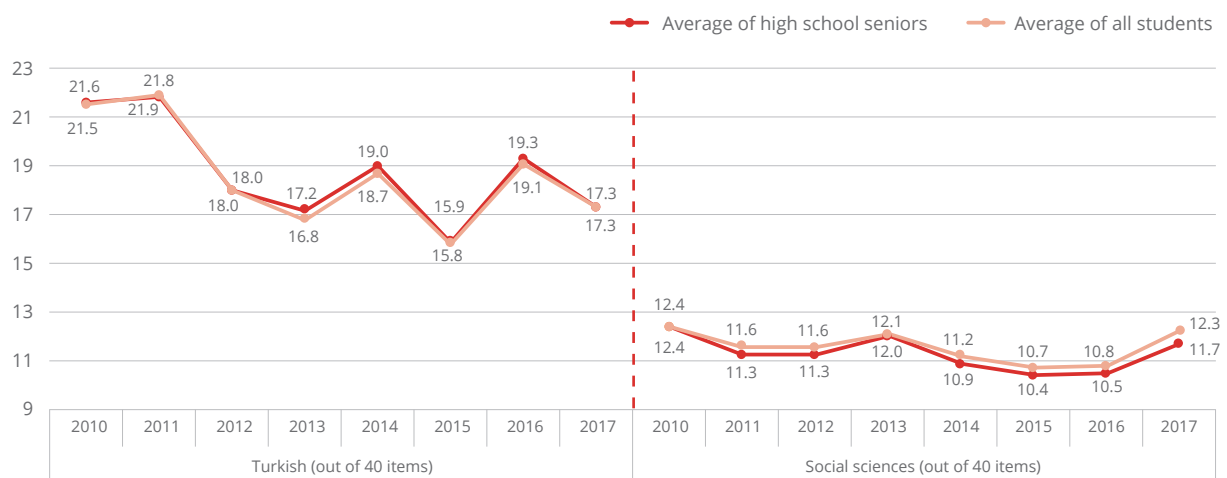
Selection and placement into higher education institutions are carried out centrally by the Measurement, Selection and Placement Center (ÖSYM). In this framework, a two-step exam system was implemented in transition to higher education. Initially all candidates were taking to Higher Education Transition Exam (YGS), and those candidates who passed a certain threshold in this first exam could enter the Bachelor Placement Examinations (LYS). In YGS, all candidates used to enter in the tests in math, Turkish, social sciences and science, each comprising 40 questions. The exam used to measure the basic knowledge and skills of all candidates in these 4 areas. In LYS, there were 13 test types in an exam of 5 sessions (in 2017, math and geometry were combined, and reduced to 12 test types) and there were a total of 12 score types. The number of questions asked was 50 in the math test and 30 in the geometry test in the Math exam (LYS-1), 30 from each group including physics, chemistry and biology tests in the science exam (LYS-2), 56 in Turkish language and literature test and 24 in geography 1 test in literature-geography exam (LYS-3), 44 in history test, 14 in the geography II test and 32 in the philosophy group test in social sciences exam (LYS-4), and 80 questions from each in English, German and French in the freeing language exam (LYS-5) (ÖSYM, 2016). However, this system was abolished with a statement from Board of

Higher Education (YÖK) on October 12, 2017, and it was expressed that a new Exam (YKS) would be implemented in 2018.

It was expressed that the YKS, which is planned to be implemented, will be administered on the weekend, and there will be a two-session exam on Saturday and a foreign language exam on Monday. With basic math and Turkish which includes 40 questions in the Basic Competency Test (TYT) in the session held on Saturday morning, it aims to measure the basic competencies of candidates in these areas. In the session held on Saturday afternoon, a total of 4 tests will be presented including one from Turkish language and literature and geography, and from social sciences, math and science, and 40 questions will be asked from each test type (YÖK, 2017a). Following the criticisms received from the public, YÖK TYT content was revised of in accordance and in addition to the 40 Turkish and 40 math questions, 20 social sciences and 20 science questions were added to the exam, and in addition to this the second session was moved to Sunday morning (YÖK, 2017b).

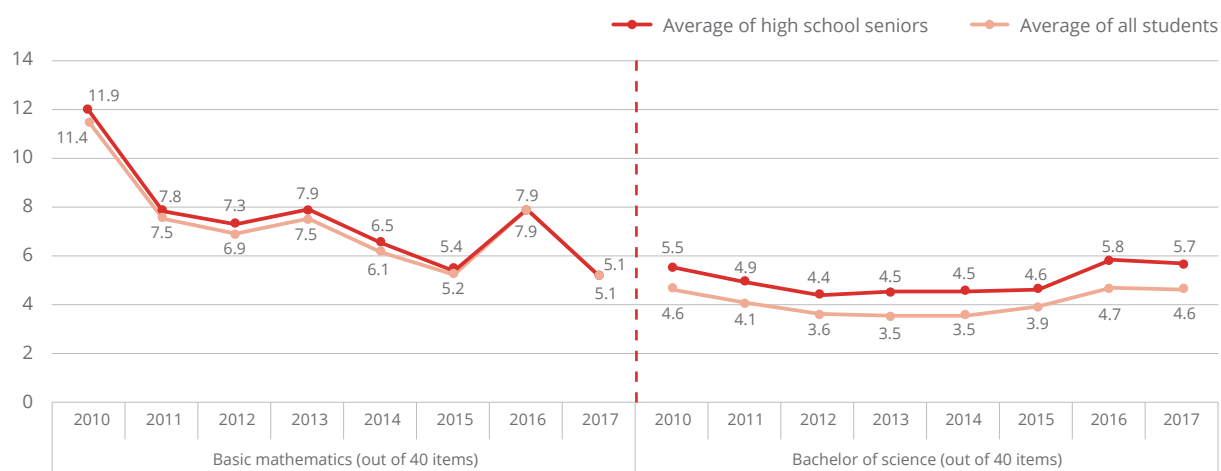
Under this indicator, the average net scores of candidates who entered the YGS and LYS exams will be analyzed. Analyzing the net scores of candidates is important in terms of providing insight on the success status of students in

Figure B.4.1 Trends in the average net scores of candidates who entered the Turkish and social sciences exam in YGS (2010-2017)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

Figure B.4.2 Trends in the average net scores of candidates who entered the Turkish and geometry exam in YGS (2010-2017)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

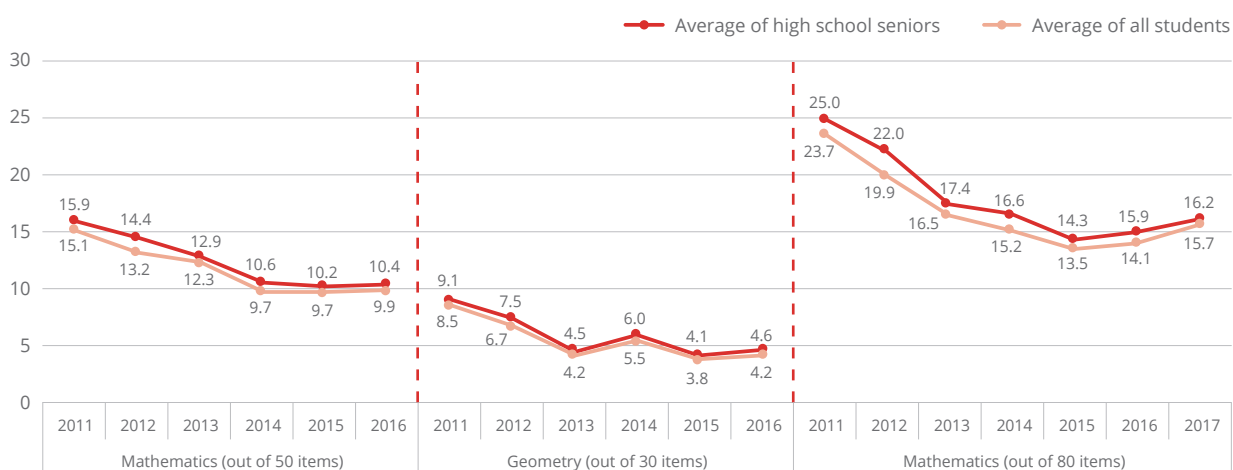
high school senior class and secondary education graduates and the overall performance of the education system.

The change in the average net scores of candidates who entered the YGS between 2010-2017 in Turkish, social sciences, basic math and science tests, in other words the average success in these tests, is given in Figure B.4.a and Figure B.4.2. When we look at the average net scores of candidates who entered the YGS in Turkish, social sciences, basic math and science tests, it can be seen that the average net scores in other areas than Turkish is low compared to the number of questions asked. The average net scores of all candidates who entered the YGS and of

candidates who are in high school senior class, are similar. The average net scores in Turkish tests varied over the years and had a fluctuating trend. The average net scores of candidates who entered the YGS varied over the years from 16 to 22 for Turkish, 10 to 13 for social sciences, 5 to 12 for basic math, 3 to 6 for sciences, over a total of 40 questions. The average net scores of high school senior class students who entered the YGS in 2017 were 17.3 in Turkish, 11.7 in social sciences, 5.1 in basic math and 5.7 in science.

The change in average net scores in math, geometry, physics, chemistry and biology tests of candidates who entered

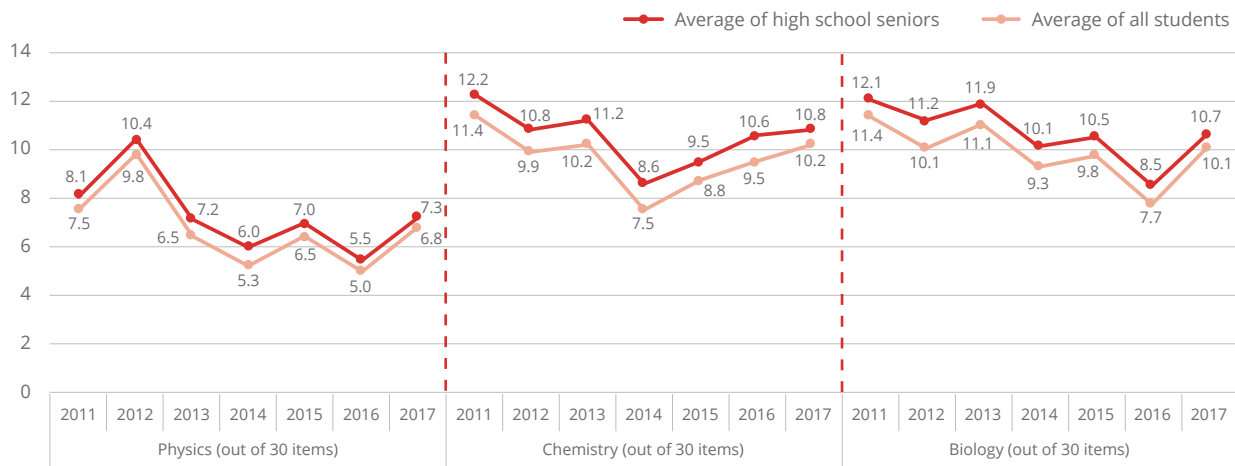
Figure B.4.3 Trends in the average net scores of candidates who entered the Turkish and geometry exam in LYS (2011-2017)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

Note: Math and geometry booklets were merged under a single booklet (math) after 2017, and the average was re-calculated after combining these sections so as to be in compliance with the previous years.

Figure B.4.4 Trends in the average net scores of candidates who entered in physics, chemistry and biology exam in LYS (2011-2017)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

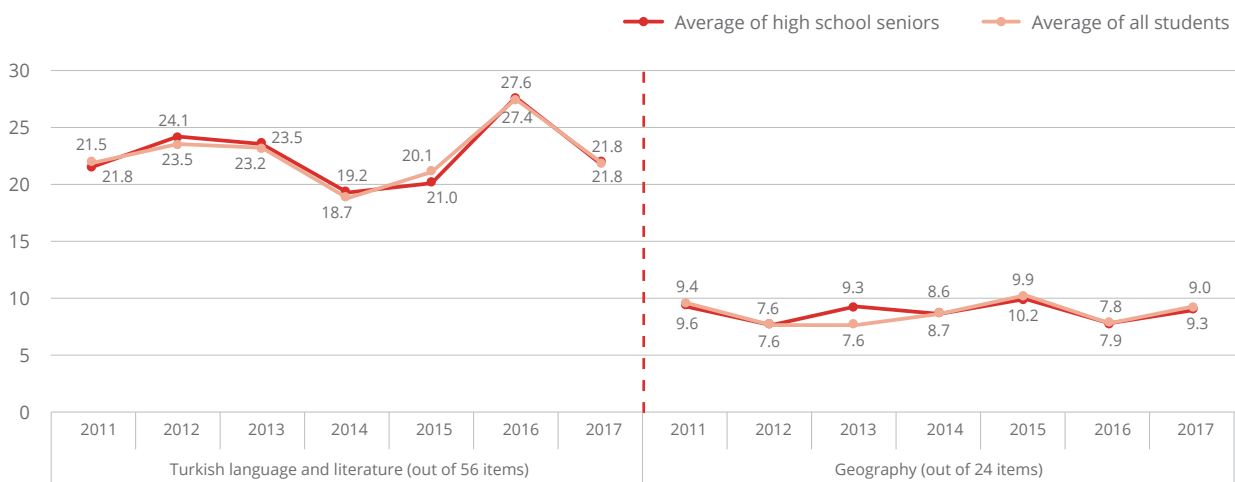
LYS between 2011-2017, is given in Figure B.4.3 and Figure B.4.4.

In 2017, ÖSYM collected math and geometry under a single test and combined these under a math test of 80 questions with a number of questions remaining the same. In Figure B.4.3, the math test average net scores of candidates over 80 questions were calculated again. According to this, there was a decline trend in the average net scores of candidates in math and geometry tests in LYS from 2011 to 2016. Whereas the average net score of high school senior class candidates who entered the math test in LYS was 16.2 in 2017, the average net score of all

candidates was 15.7. Despite the fact that the average net scores of candidates who entered chemistry and biology tests were similar according to the data in Figure B.4.4, the average net scores of candidates who entered the physics test were lower. The average net score in the physics test consisting of 30 questions at the senior class level in LYS in 2017 was 7.3, and the average net score in chemistry was 10.8 and 10.7 in biology.

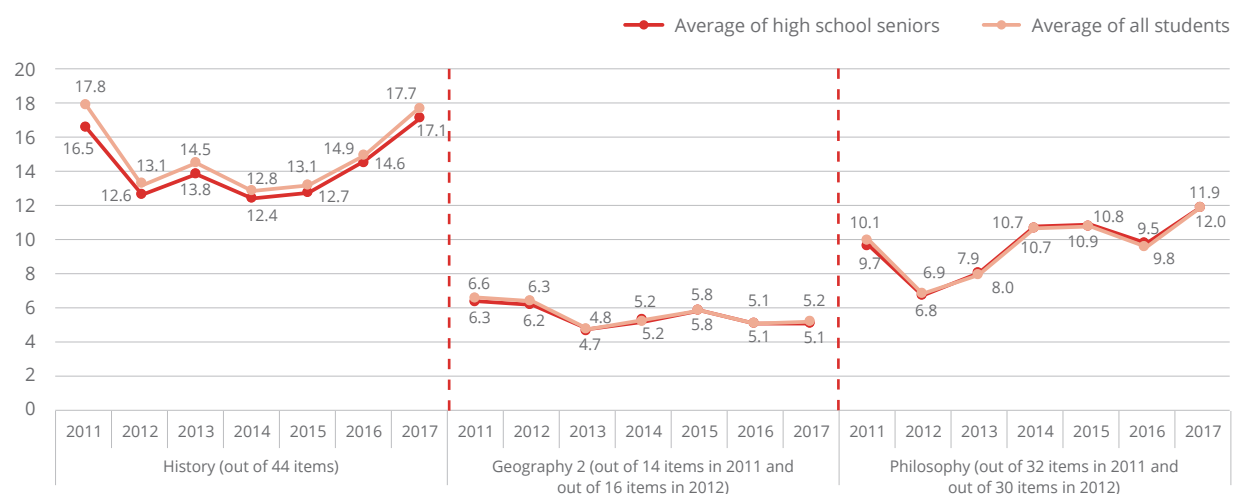
The change in the average net scores of candidates who entered the LYS over the years 2011-2017, in Turkish language and literature I, history, geography II and philosophy group tests, is shown in Figure B.4.5 and Figure B.4.6. Al-

Figure B.4.5 Trends in the average net scores of candidates who entered the Turkish language and literature and geography 1 exam in LYS (2011-2017)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

Figure B.4.6 Trends in the average net scores of candidates who entered the history, geography 2 and philosophy group exam in LYS (2011-2017)



Source: The figure. Prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

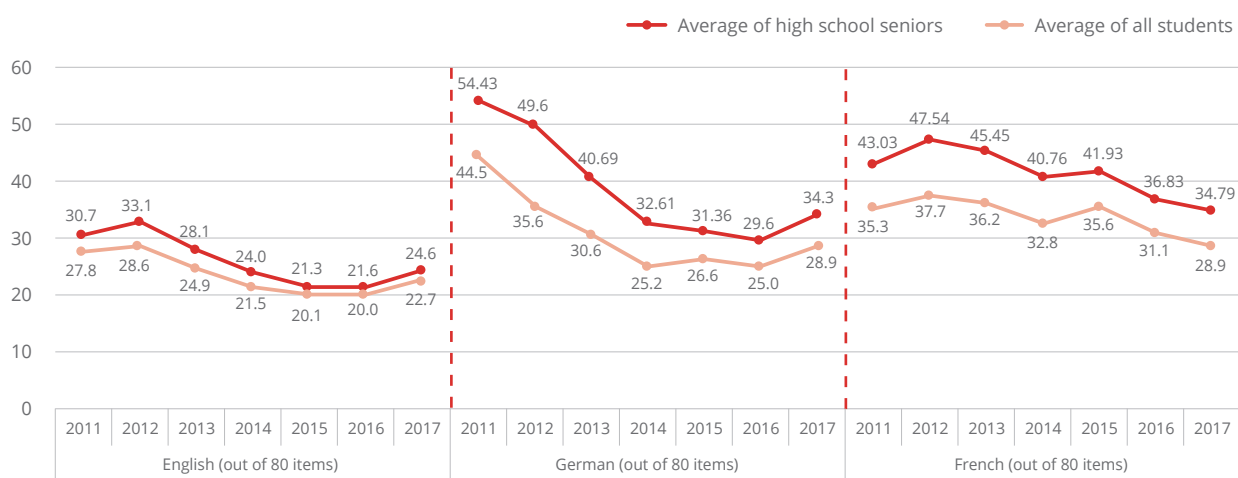
though the average net scores of these tests are relatively high compared to math and physics tests, they are still low.

The average net scores of candidates who entered the LYS in 2017 in high school senior year are 21.8 out of 56 questions in Turkish language and literature; 9 out of 24 questions in the geography I test; 17.1 out of 44 questions in the history test; 5.1 out of 14 questions in geography II test, and 12 out of 32 questions in the philosophy group test. When the change in the average net scores over the years is analyzed, the average net score in the Turkish language

literature test ranges between 18 and 28, in the geography I test between 7 and 10, in the history test between 12 and 18, in geography II test between 4 and 7, and in philosophy group test between 6 and 12.

The change in the average net scores in English, German and French tests of candidates who entered the LYS between 2011-2017 is given in Figure B.4.7. From 2011 to 2017, the average net score in English changed between 20 and 33, in German between 25 and 55, and in French between 48 and 30.

Figure B.4.7 Trends in the average net scores of candidates who entered the English, German and French exam in LYS (2011-2017)



Source: The figure. prepared originally by The Outlook on Higher Education 2017 using YGS statistics published by ÖSYM and updated by the authors.

HIGHER EDUCATION TRANSITION RATES AND HIGHER EDUCATION QUOTAS

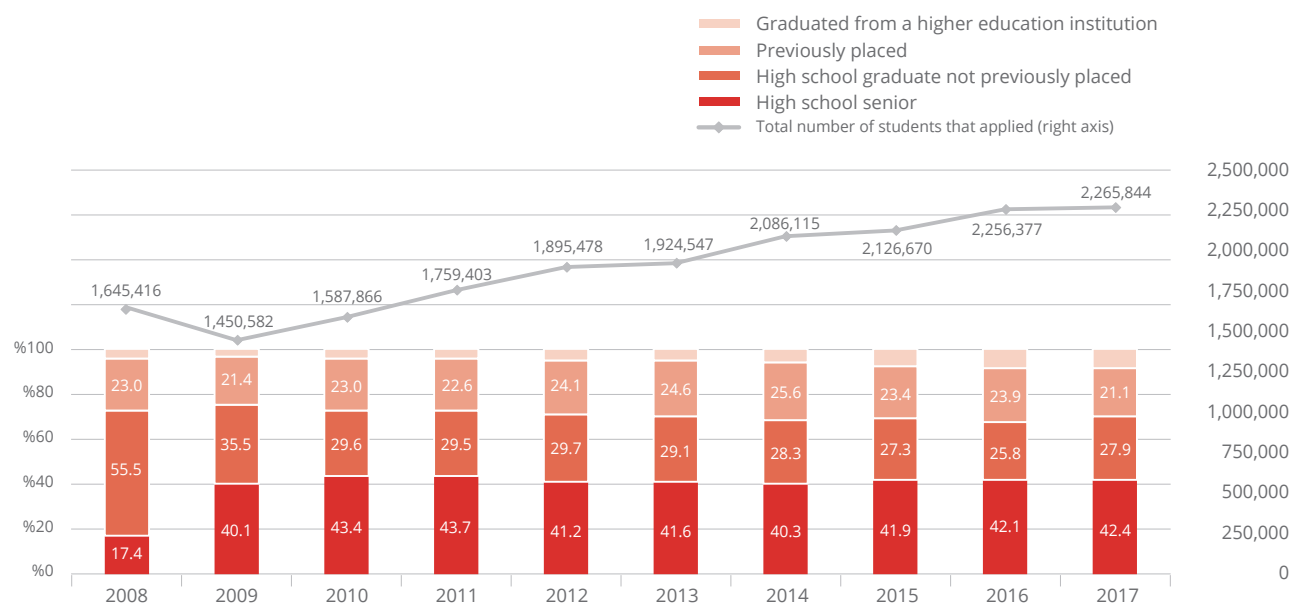
The difference between the higher education supply and demand in Turkey has been gradually increasing over the last years (Gür, Çelik, Kurt and Yurdakul, 2017). In this environment where the competition has increased, students in high school senior class or graduate students, who want to be placed in a higher education program, work intensely towards higher education entrance exams. Due to the fact that the young population is high in Turkey and the higher education capacity is limited, central exams were implemented for transition from secondary education to higher education.

Under this indicator, rates of transition to higher education and higher education quotas are examined and analyzed according to the type of high school, type of higher education programs, high school graduate status of the applicants, and whether the person was placed beforehand. Since ÖSYM did not publish detailed data, in some figures the last year data covers 2016 or 2017.

The number of candidates who applied to the university entrance exam between 2008 and 2017 and the change in their proportional distribution according to high school graduation rates and whether they were placed before, is given in Figure B.5.1.

Whereas the number of applicants in university entrance exam in 2008 was 1 million 645 thousand, this number increased to 2 million 266 thousand in 2017. This data demonstrates that the demand for higher education is ongoing and increasing. Despite the fact that the number of applicants generally increased between 2008-2017, there was a decrease in the number of applicants between 2009-2010. The basic reason for this is, as seen in Figure B.1.6, the decrease in the number of graduates in the 2007-2008 educational term with the increase of the high school education period to 4 years. This situation can also be seen when we look at the rate of senior class students among applicants to the university entrance exam. In all

Figure B.5.1 Number of candidates who applied to the university entrance exam and the trends in high school graduation rates and the placement of previous applicants (%) (2008-2017)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

years other than 2008, the rate of those who applied to the exam at the senior class level was higher than 40%, this was 17.4% in 2008. In addition to this, the rate of applications to the higher education exam for those who have completed a higher education program among those who applied to the exam between 2008-2017, and for those who were placed in a higher education program beforehand.

Whereas the rate of those who graduated from a higher education program in 2008 was 68,100 with 4.1%, this increased to 193,715 with 8.5% in 2017. Similarly, the number of those who were previously placed in a higher education institution and applied the exam was 377,718 in 2008; this number increased to 478,997 in 2017. When these two data indicators are evaluated together, it can be seen that the most important reason that pressure increased on the university entrance exam is that those who succeed in the exam and study in a university and those who graduate enter the exam again. Around one third of those who applied to the exam comprise people who were previously placed in a university and who graduated. The main reason for this situation is related to the fact that the majority of higher education programs are not sufficiently attractive for students/graduates and not sufficiently attractive for employment. In addition, as a result of the expansion of the higher education system and

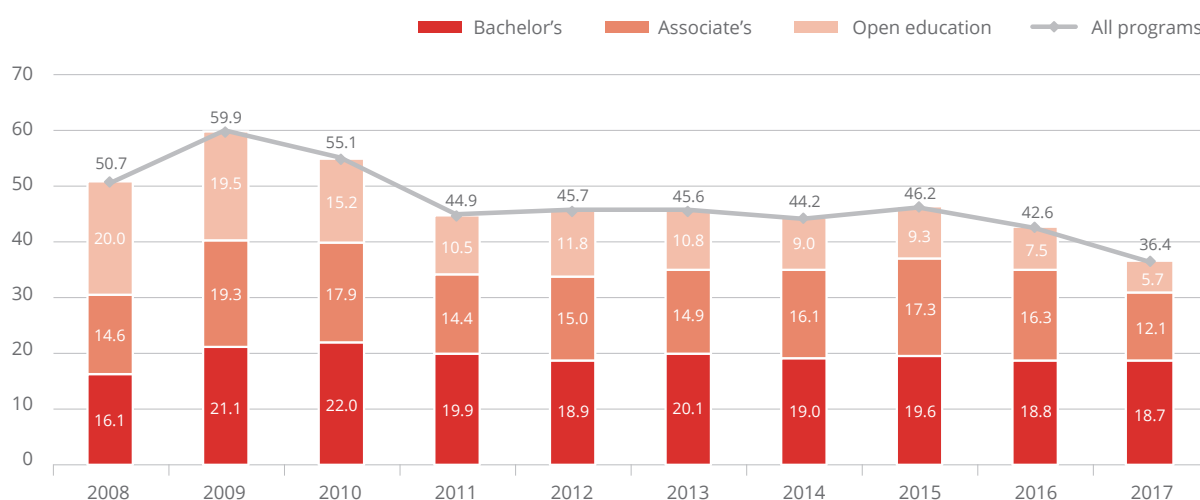
the increase in access opportunities, students/graduates are searching new opportunities with lifelong learning approach (Gür et al. 2017).

The change in the rate of students placed in different higher education programs between 2008 and 2017 to the rate of students who applied to the university entrance exam, is shown in Figure B.5.2. According to this, the rate of placement among the applicants to the university entrance exam between 2008-2010 is above 50%. The higher rate was reached with 59.9% in 2009, and the placement rate followed a decrease trend for the applicants in the following years, declining to 36.4% in 2017.

This data clearly demonstrates that the big gap between the supply and demand in higher education entrance system has been continuing and the expansion of the higher education system is a necessity.

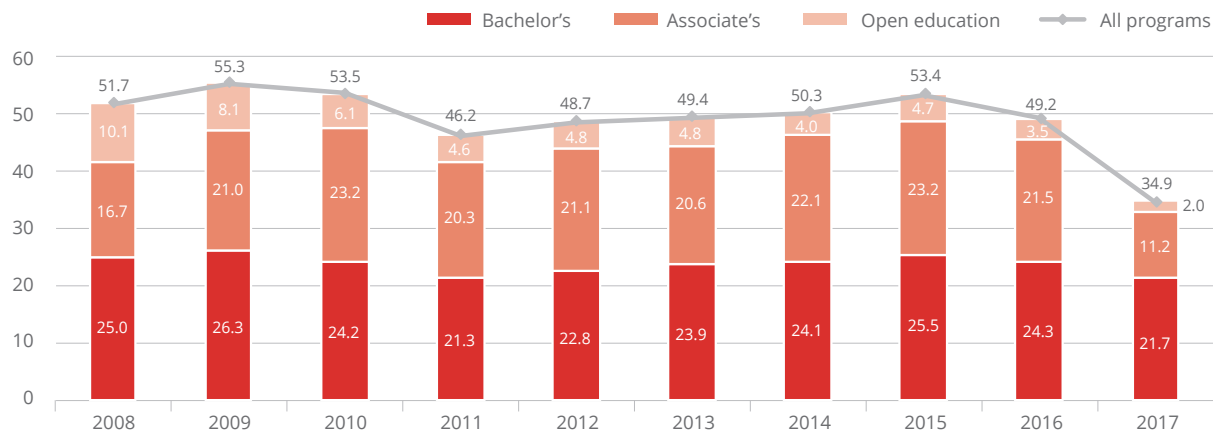
One of the most striking issues in Figure B.5.2 is the rate of placement in different programs. The rate of placement in undergraduate programs between 2008-2017 increased from 16.1% to 18.7%. In other words, despite all these investments made for improving and developing the higher education system in the period of ten years, one fifth of the applicants could not be placed in an undergraduate program. The main reason for the rate of placement in

Figure B.5.2 Trends in the rate of students placed in different higher education programs compared to the number of students who applied to university entrance exams (%) (2008-2017)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

Figure B.5.3 Trends in the number of students placed in higher education programs while in their high school senior year compared to the number of students who applied to the university entrance exam in their senior year (%) (2008-2017)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

undergraduate education not increasing despite the increase of the quota, relates to a high number of quotas remaining unoccupied compared to previous years. As it can be seen from Figure B.5.13, 111 thousand quotas were fulfilled in undergraduate programs in 2017 as a result of additional placements. The reason for such a high number of quotas remaining empty is the condition applied by YOK asking that students place “in the first 240 thousand” in order to be placed in various programs such as teaching and engineering. As a result of this threshold applied by YOK, many programs were left unfulfilled despite students wanting to be educated in such programs. For example, geology and mining and engineering and in particular the computer and technology teaching programs were almost left empty other than a few universities as a result of the retention of the condition of students placing among the first 240 thousand.

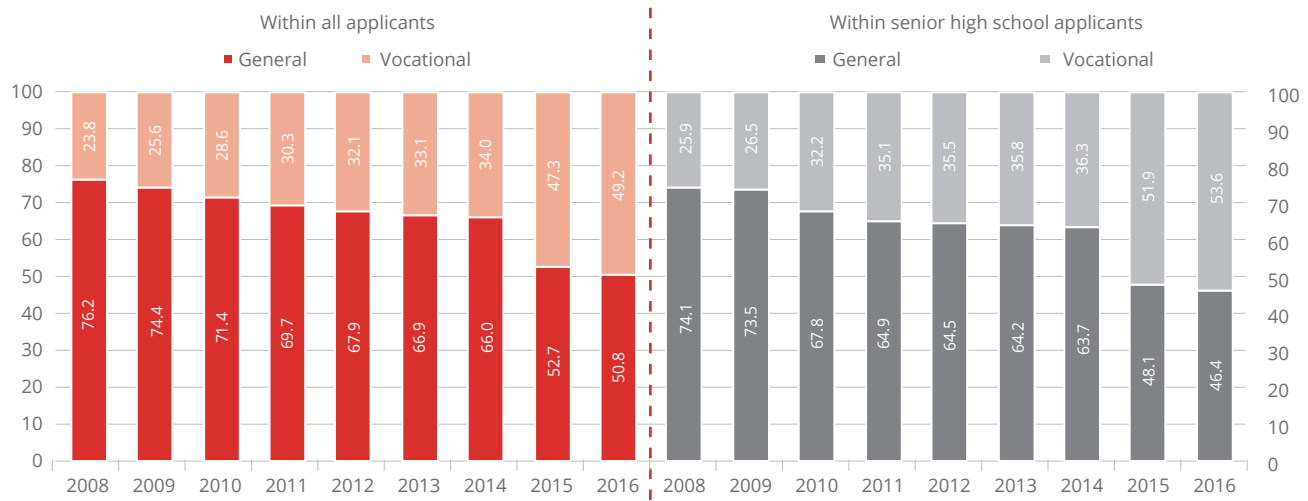
The rate of placement in associate (two-year) programs between 2008-2017 decreased from 14.6% to 12.1%. There was a very sharp decrease in 2017 compared to the previous year. The basic reason for this, as shown in Figure B.5.12, relates to the fact that 211 thousand spots of the quota allocated to associate programs were left unfilled. The sharpest change between 2008-2017 was seen in the

placement rates into open education programs. Whereas 20% of the applicants were placed in 2008, this rate decreased to 5.7% in 2017. The decrease in the rate of placement into open education relates to the increase of capacity that occurred with the opening of new universities and the increase of quotas of existing universities and the new limitation imposed on the quotas of certain open education programs.

The rate of students who were placed in a higher education program their senior year in high school to the number of students who applied to the university entrance exam in the high school senior class between 2008-2017 are shown in Figure B.5.3. The rate of applicants to the higher education entrance exam among the high school senior class decreased from 51.7% to 34.9% in 2008-2017.

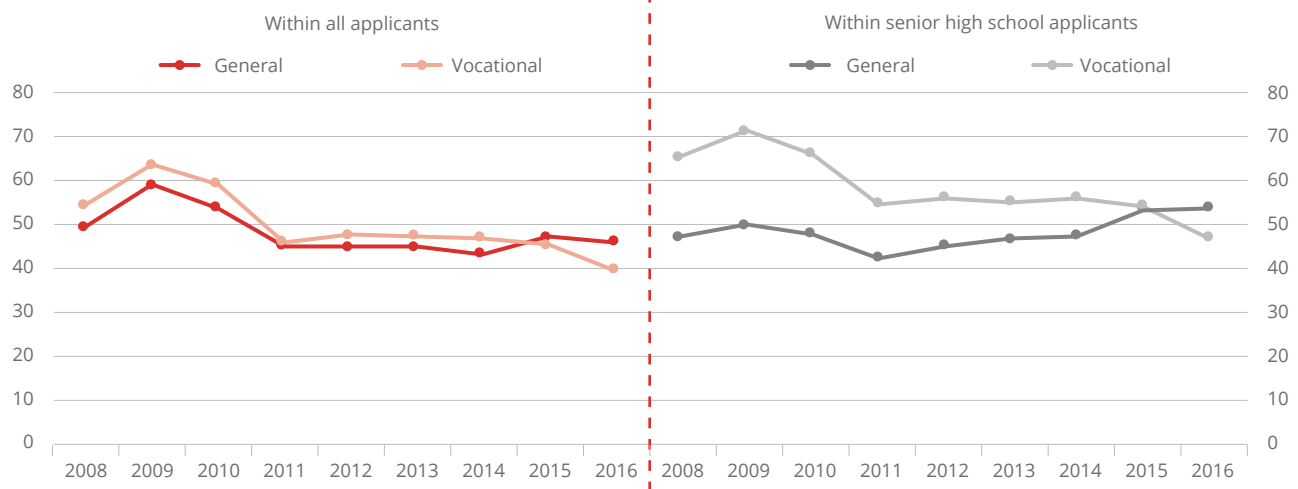
The important thing here is that the rate of placement which changed between 46% and 56% between 2008-2016, dropped sharply in 2017. The placement rate in undergraduate programs between 2008-2017 increased from 25% to 21.7%. There was a decrease of 2.6% between 2016 and 2017. The most important change that affected the placement rate of senior class students occurred in the placement into associate programs. The rate of

Figure B.5.4 Trends in the proportional distribution of applicants in the university entrance exam according to the type of school they graduated from (%) (2008-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.
 Note: In the MONE annual statistical book, multi-program high schools, open education high schools and fine arts high schools were included under the general high school category until 2015. However, these were covered by the vocational high school category after 2015. Teacher high schools were given as a separate category after 2015 in the MONE statistics. However, for the sake of being consistent, they are given under the category of general high schools in the graphic. These situations should be taken into account while interpreting the data before and after 2015.

Figure B.5.5 Trends in the rate of those placed in higher education programs among the total number of those who applied to the university entrance exam by high school type (%) (2008-2016)

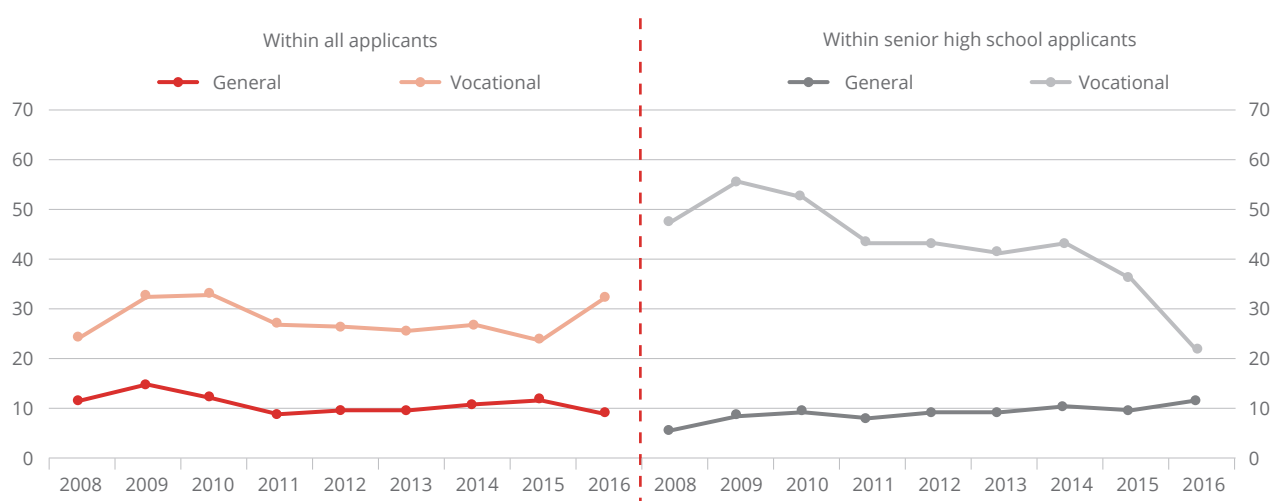


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

placement into associate programs which was 16.7% in 2008 increased to 21.5% in 2016, and decreased to 11.2% with a sharp decrease in 2017. As it was expressed above, the fact that the quota of undergraduate and associate programs remains empty to an important extent explains this situation. Finally, the rate of placement of senior class students into open education programs decreased from

10.1% to 2% between 2008-2017. This demonstrates that the senior class students prefer open education programs more. Finally, the fact that only one third of the senior class students were placed in a higher education program and others could not be placed is highly significant. Moreover, these people are mostly neither in work nor in school. This situation demonstrates that the higher education system

Figure B.5.6 Trends in the rate of students placed in an associate program among those who applied to the university entrance exam by high school type (%) (2008-2016)



Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

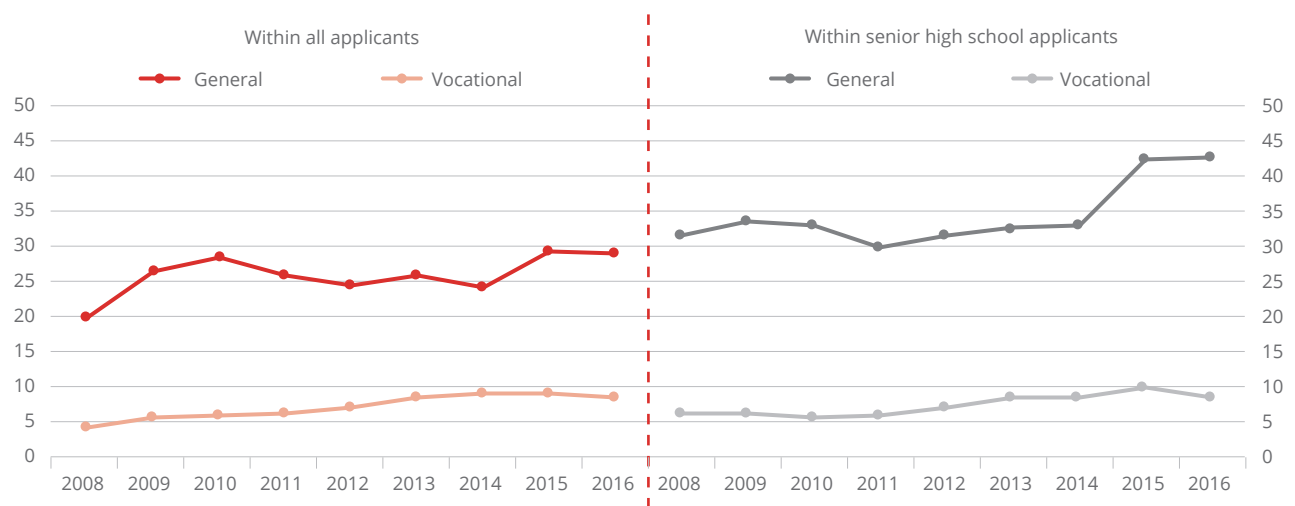
should be planned in a more rational manner, the quotas should be adjusted and the system should be enlarged.

The change in the proportional distribution according to the type of high school the applicants to the university entrance exam graduated from between 2008 and 2016 is shown in Figure B.5.4. According to this, 23.8% of all students who applied to the university entrance exam in 2008 were from a vocational high school, and this rate increased to 49.2% in 2016. Whereas 25.9% of the high school senior class students who applied to the university entrance exam were high school graduates in 2008, this rate increased to 53.6% in 2016.

In other words, the rate of vocational high school graduates among students who applied to the entrance exam increased significantly over time. The basic reason for this is the abolishment of the coefficient decision, policies of the Justice and Development Party (AK Party) governments to increase the rate of students in vocational education, and the increase in the rate of students together with the number of vocational high schools.

The change in the rate of those placed in a higher education program among the applicants to university entrance exams by type of high school between 2008-2016 is shown in Figure B.5.5. According to this, the rate of vocational high school graduates who were placed in a higher education program after applying to the university entrance exams between 2008-2014 was higher compared to the general high school graduates, and this situation reversed between 2015-2016. Now the general high school graduates have applied and are placed at a rate which is higher than the vocational high school graduates. In the senior class level, whereas the rate of those who applied and were placed by the exam among vocational high school students was higher compared to general high school students between 2008-2015, this figure was reverse in 2016 and the rate of those who applied and were placed from general high schools rose higher than those from vocational high school in 2016. The reason for the rate of high school students being placed after 2016 is the ending of the practice of placements into associate programs by transition without the administration of an exam.

Figure B.5.7 Trends in the rate of students who were placed in an undergraduate program among those who applied to the university entrance exam by high school type (2008-2016)



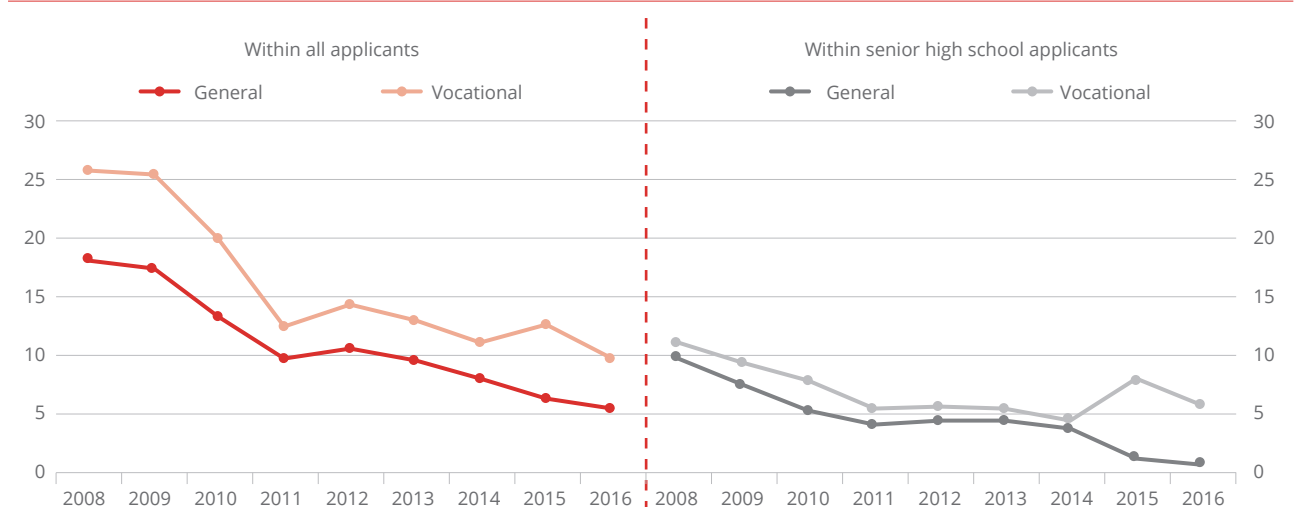
Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

The change in the rate of those placed in an associate program among the applicants to the university entrance exam by type of high schools between 2008-2016 is shown in Figure B.5.6. According to this, the rate of general high school students being placed into an associate program among all applicants between 2008-2016 decreased from 11.6% to 8.9%, and the rate of placement into an associate program, which was 24.2% in 2008, increased to 32.3% in 2016. The rate of those who were in their senior class of general high schools and placed in associate programs between 2008-2016 increased from 5.8% to 11.5%. There

was a sharp decrease in the rate of those in vocational high schools in their senior year who were placed in associate programs over the same years decreased from 45.7% to 21.4%. The basic reason for the decrease in the placement rate of vocational high school students into associate programs is the abolishment of the exam-free transition after 2016.

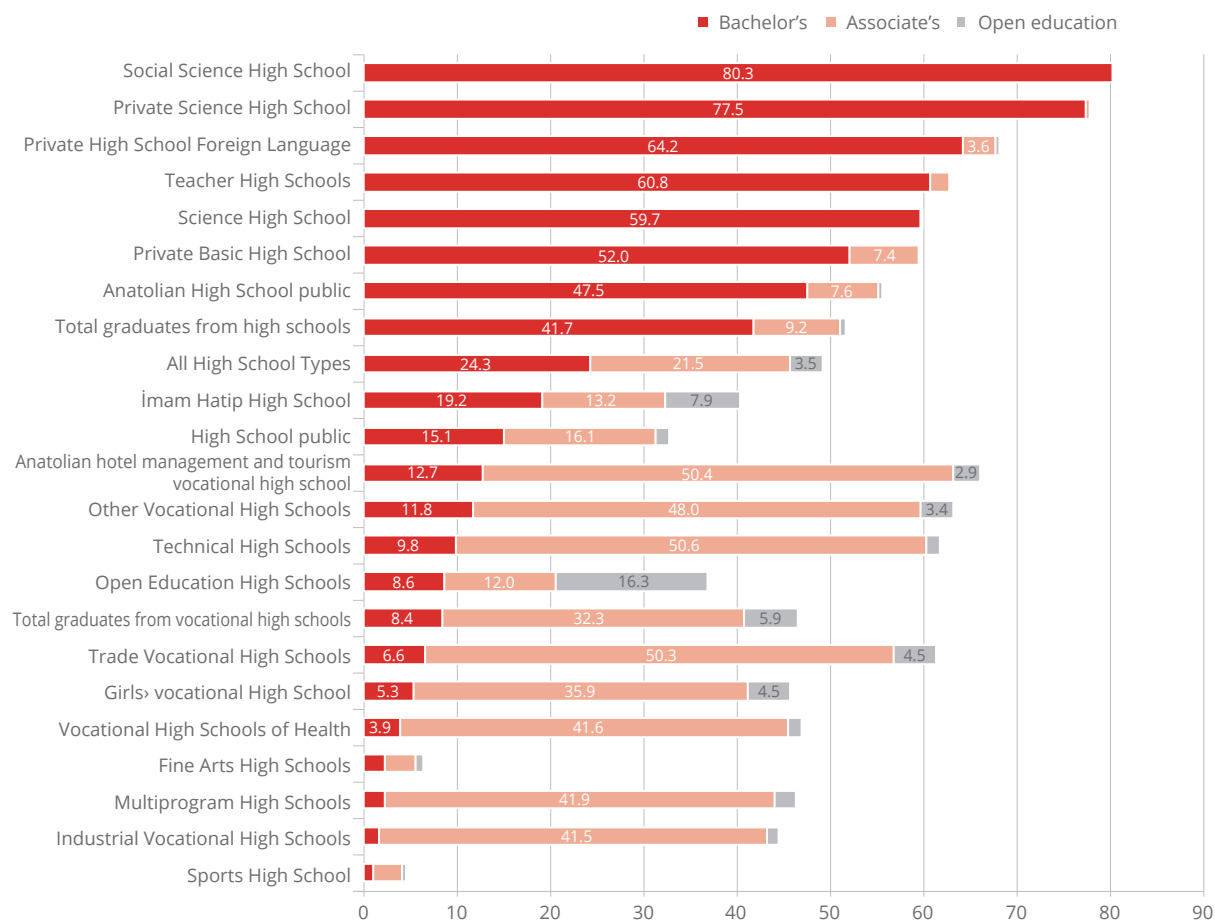
The change in the rate of those placed in an undergraduate program among the applicants to the university entrance exam by type of high schools between 2008-2016 is shown

Figure B.5.8 Trends in the rate of students who were placed in an open education program among those who applied to the university entrance exam by high school type (2008-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years was updated by the authors.

Figure B.5.9 Rate of senior class applicants to the university entrance exam who were subsequently placed in a higher education program according to high school type (%) (2016)



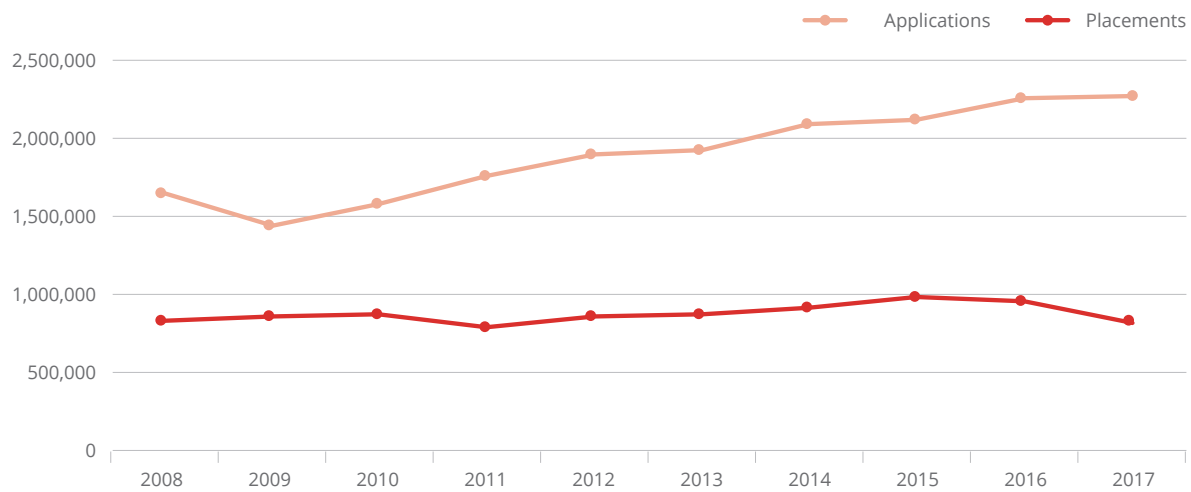
Source: Figure prepared using MONE 2016-2017 statistics and included in The Outlook on Higher Education 2017, was used.

in Figure B.5.7. According to this, the rate of general high school students being placed into undergraduate programs among all applicants between 2008 -2016, increased from 19.8% to 28.9%, and the rate of those who applied in their senior year I increased from 31.5% to 42.6%. The rate of placement in undergraduate programs of vocational school students among all applicants between 2008-2016 increased from 4.3% to 8.3%, and among those in their senior year from 6.3% to 8.4%.

The change in the rate of those placed in an undergraduate program among the applicants to the university entrance

exam by type of high school between 2008-2016 is shown in Figure B.5.8. Among all applications between 2008-2016, the rate of general high school students placed in open education programs decreased from 18.1% to 5.5%, and the rate of vocational high school students placed from 25.9% to 9.7%, and the rate of placement into open education programs of general high school students in their senior year decreased from 9.7% to 0.7% and those from vocational high schools decreased from 11% to 5.9%. The reason for this decrease relates to the increase of the face to face education quota as specified above, and the reduction of open education quotas.

Figure B.5.10 Trends in the number of applicants who were placed by OSYS (2008-2017)

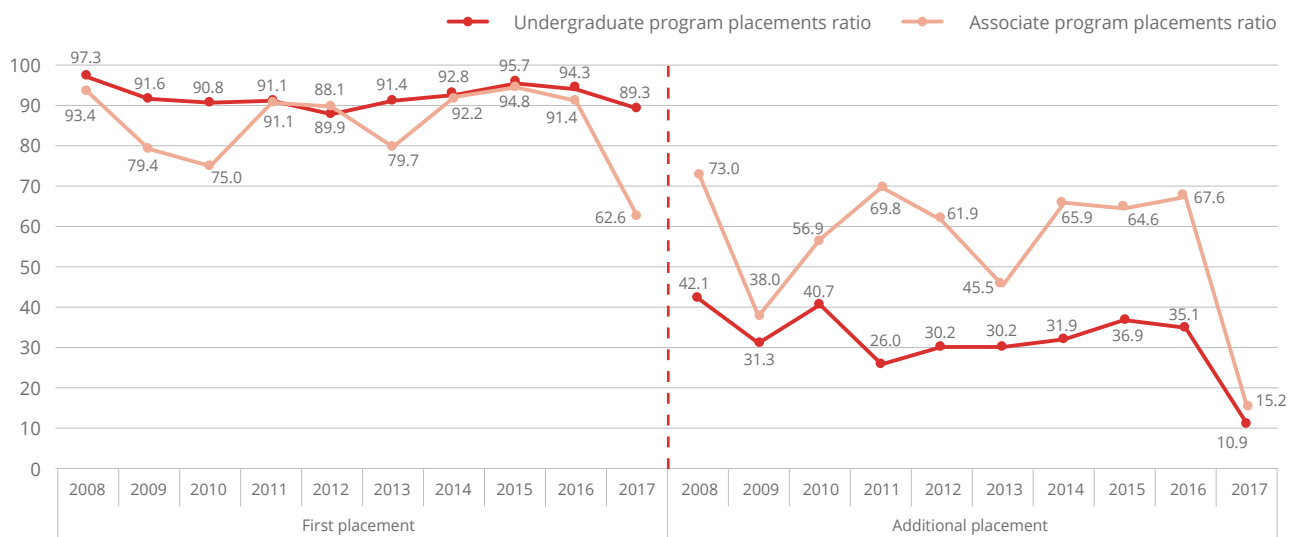


Source: The figure, prepared originally by The Outlook on Higher Education 2017 using ÖSYM statistics published in various years was updated by the authors.

The rate of those placed into a higher education program by high school type among the applicants to the university entrance exam in their senior year in 2016, is shown in Figure B.5.9. Accordingly, the rates of those placed in undergraduate, associate and open education program among those who applied to the university entrance exam in their senior year, differs clearly among the different types of schools.

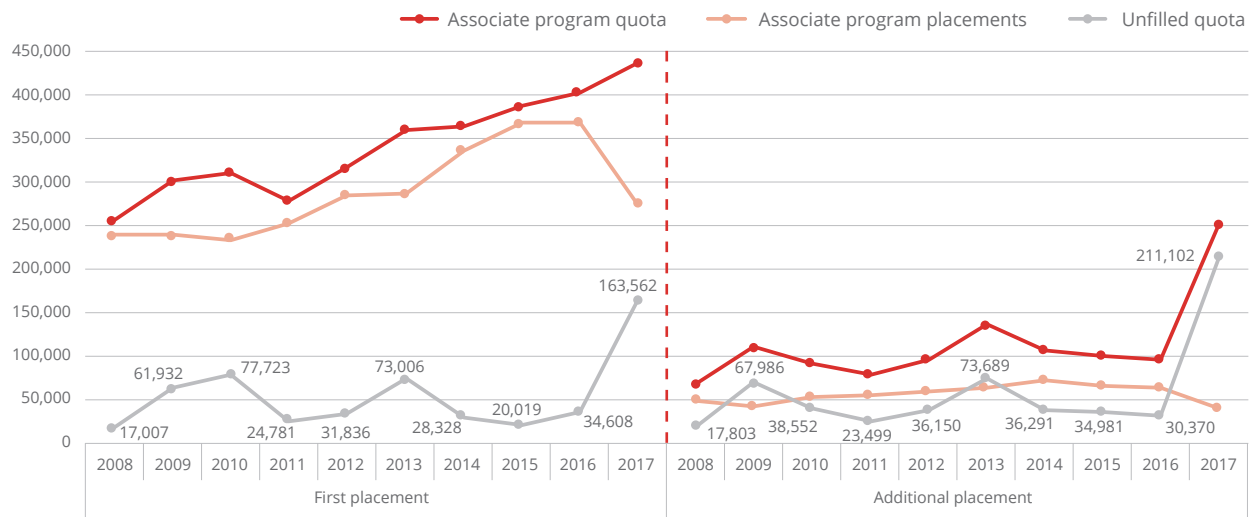
Whereas graduates of more academic types of schools, such as social sciences high schools, private science high schools, private high schools, teachers' high schools, science high schools, basic high schools and Anatolian high schools are placed in undergraduate programs; most of the graduates of high schools giving vocational and technical education are placed into associate programs and very few of them are placed into undergraduate programs. This

Figure B.5.11 Trends in the placement rates to higher education undergraduate and associate programs (2008-2017)



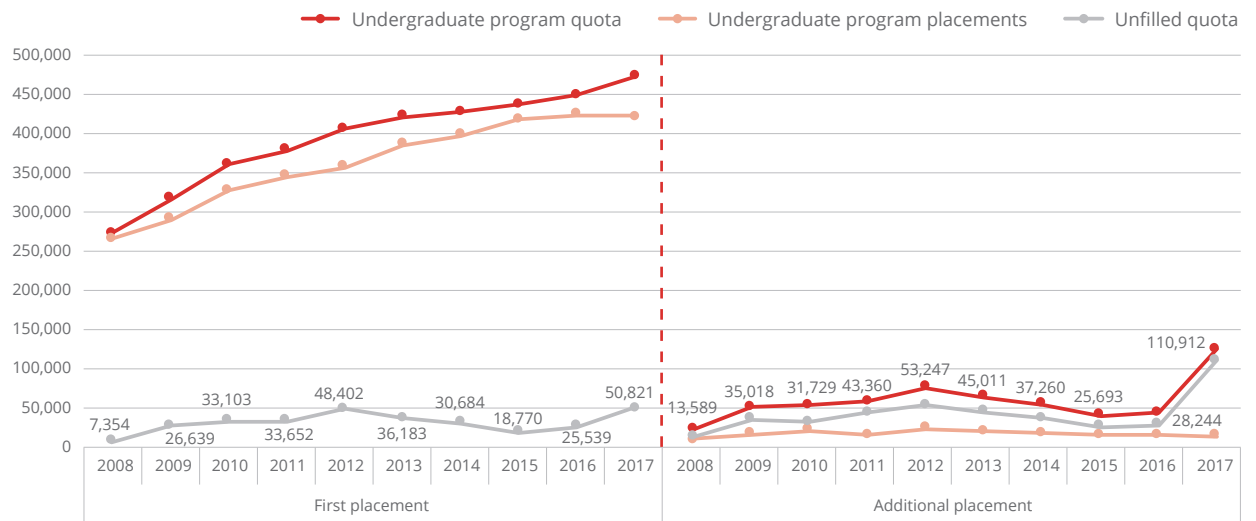
Source: Compiled using ÖSYM placement and additional placement results published in various years.

Figure B.5.12 Trends in the associate program quotas in higher education and in the number of empty quotas (2008-2017)



Source: The figure, prepared originally by the Outlook on Higher Education 2017 using ÖSYM data and ÖSYM placement and additional placement results published in various years was updated by the authors.

Figure B.5.13 Trends in the undergraduate program quotas in higher education and in the number of empty quotas (2008-2017)



Source: The figure, prepared originally by the Outlook on Higher Education 2017 using ÖSYM data and ÖSYM placement and additional placement results published in various years was updated by the authors.

data demonstrates the severity of the inequality among high schools, as well as the existing hierarchy.

The change in the number of those who applied to and were placed by the Student Selection and Placement System between 2008-2017 is shown in Figure B.5.10.

Accordingly, the number of those who applied to the exam between 2008-2017 increased from 1 million 645 thousand to 2 million 266 thousand. Although the number of those placed in a program increased from 833 thousand to 980 thousand between 2008-2015, there was a decline trend in the last 2 years to 825 thousand. In other words,

the decreasing gap in the number of applicants who were placed between 2008-2009 had a continuous increase trend in the following years, reaching the highest in 2017.

Moreover, despite the efforts of the AK Party governments to improve the higher education system in Turkey, the number of students placed in higher education has increased slightly over the past eight years until the last two years, then there was a stagnant period and a decline in the last two years. This situation demonstrates that the problem between supply and demand in higher education entrance system in Turkey from the past up until now has been continuing at a significant level.

The change in the quota of associate and undergraduate programs in higher education between 2008-2017 and the quota that remained empty is shown in Figure B.5.11; and the change in the quota of associate and undergraduate programs during these years and the quota that remained empty is shown in Figure B.5.12 and Figure B.5.13. . According to this the associate quotas increased from 256,860 to 436,904 between 2008-2017. Although the number of quotas that remained unfilled in associate programs fluctuates over the years following the initial placement, 163,562 quotas remained empty in 2017. In 2017, the rate of placement in associate programs was 62,6%.

In other words, no placement was made into almost two in every five quotas. The number of associate program quotas rose to 248,971 including the students who were not enrolled in the additional placement process, and 211,102 of this quota remained empty following

the additional placement. To put in more clearly, out of 436,904 associate quotas, 211,102, namely almost half of the total unmet quota, still remained empty even after additional placement.

The quota allocated to undergraduate programs increased from 272,584 to 473,767 between 2008-2017. Despite the fast increase in the number of applicants the rate of increase of the high school quota started to slow down after 2013. In the initial placement process in 2017, 50,821 of the quota remained empty. In the additional placement process, the number of the additional quota was 124,443 together with those who were not enrolled despite being placed, and 110,912 of this quota remained empty as a result of additional placement.

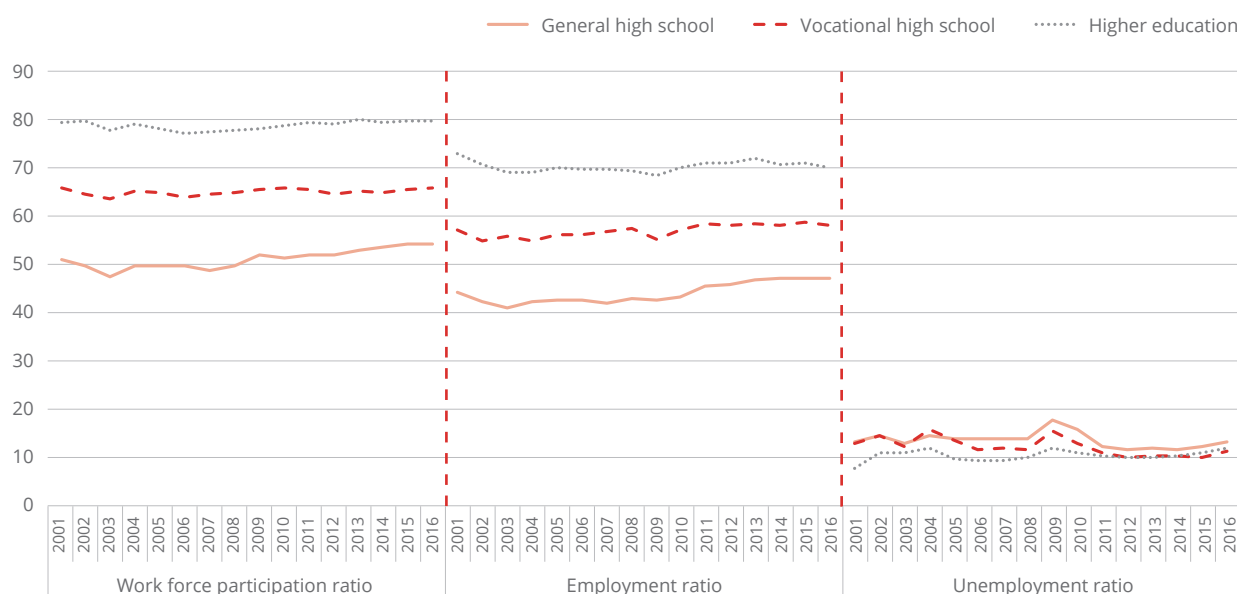
This demonstrates that almost one fourth of the quota allocated to undergraduate programs remained empty. Moreover, the demand for higher education has been rapidly increasing, however, the rate of quota increase has not been increasing at the same speed. The fact that half of associate quotas and one fourth of undergraduate quotas remained empty particularly in 2017 is a result of the inefficiency of the higher educational placement system and the wrong policies. Applications from YOK of a threshold particularly for certain programs increased the empty quota rate even more. The pressure on the axis of demand-supply on the higher education system was decreased for a couple of years after 2006. However, due to the fact that the speed of opening new universities and the rate of quotas decreased and the practice of the ranking threshold will increase creating even more pressure on higher education in coming years.

The most important element that develops the skills and qualifications of individuals is training. It is assumed that as the education level increases, the employability of individuals in the labour markets will also increase. In this section, various data which demonstrates the relationship between education and participation in the labor market is examined. When discussing the relationship between education and employment in the report "Higher Education At a Glance: Monitoring and Evaluation, the higher education dimension in particular was focused on. In this work, labor markets are evaluated within the context of the high school level. Before discussing the data related to labor employment and unemployment, it is necessary to explain how the calculations related to these concepts are made. Participation in the labor force comprises the sum of unemployed persons at an employable age together with those who are employed. The employable age means age 15 and over. The labor participation rate is obtained by dividing the sum of unemployed together with those who are employed, by the population of the employable age, and multiplying the result by 100. The employment rate is obtained by dividing the population in employment

by the employable population and multiplying the result by 100. The unemployment rate is obtained by dividing the unemployment population by the population at an employable age, and multiplying the result by 100 (Gür et al. 2017).

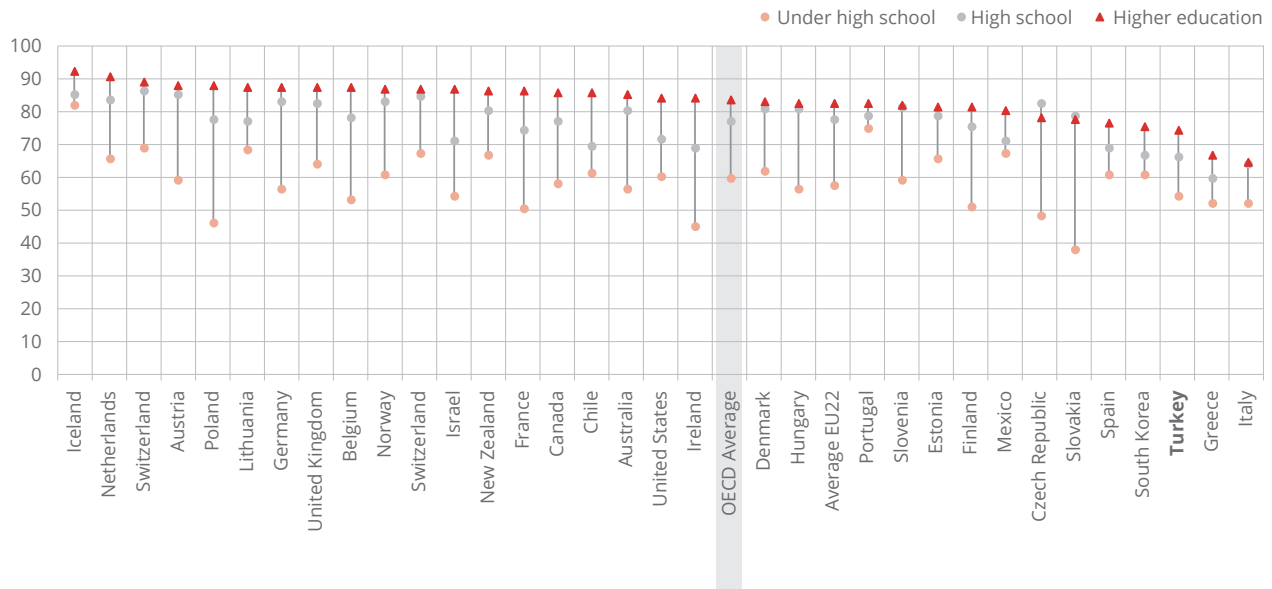
Change in participation in the labor force according to educational level between 2001 and 2016, and in employment and unemployment rates, are given in Figure B.6.1. When the graduates of vocational high schools that are the equivalent to high schools between 2001-2016 are analyzed, it can be seen that the labor force participation rate demonstrated a slight change over years, but remained at the same rate (65.9%). Participation rates of general high school graduates in the labor force between 2001 and 2016 increased from 51% to 54.4%. Participation of general and vocational high school graduates in the labor force is quite low compared to higher education graduates (79.7%). This demonstrates that participation in the labor force increases as the educational level increases. The employment rates between 2001-2016 increased from 44.2% to 47.2\$ among general high school graduates,

Figure B.6.1 Trends in participation in the labor force, employment and unemployment rates by educational level (%) (2001-2016)



Source: The figure, prepared originally by The Outlook on Higher Education 2017 using TÜİK labor force data and updated by the authors.

Figure B.6.2 Employment rates according to educational level for the 25-34 age group in OECD countries (2016)



Source: OECD (2017b)

and from 57.2% to 58.2% for high school graduates. Compared to high school graduates, it can be seen that the employment rate of high school graduates is lower. When the unemployment rates as of the educational levels are analyzed, the unemployment rates between 2001 and 2016 increased slightly from 13.3% to 13.4% in general high school graduates, and decreased from 13.2% to 11.6% in high school graduates.

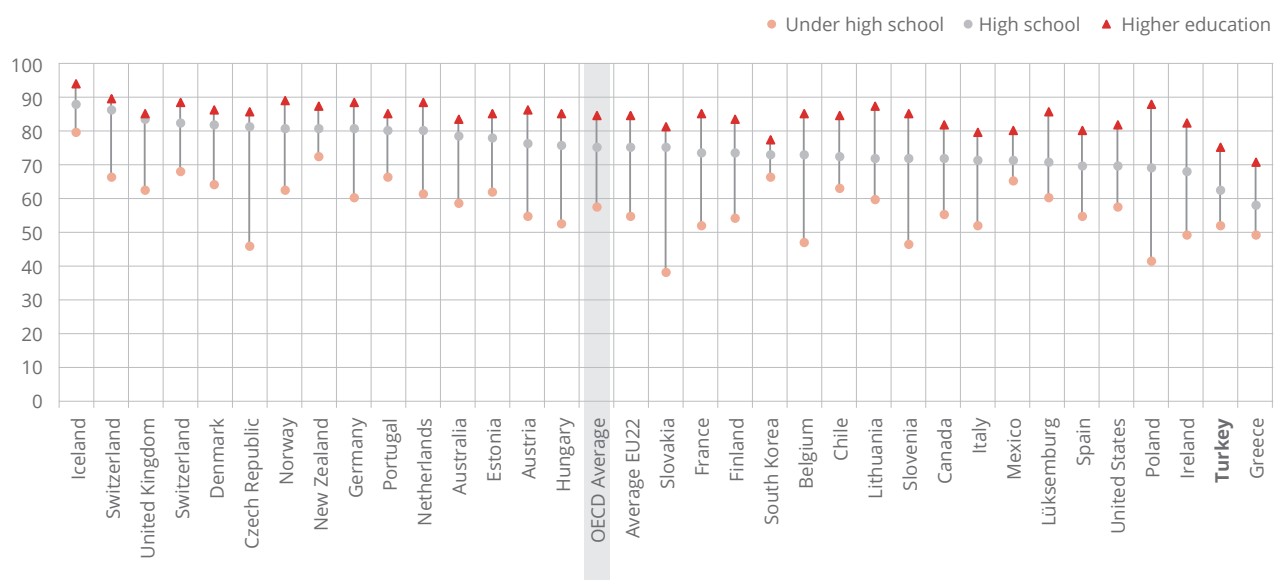
It can be seen that the unemployment rate in high school graduates is higher than higher education graduates. Moreover, the unemployment rate of vocational high school graduates is quite lower than general high school graduates. This demonstrates that vocational education is an advantage in terms of employment in labor markets though at a limited level.

Employment rates by education level between ages 25 and 34 in OECD countries in 2016, are shown in Figure B.6.2. According to this, it can be seen that employment also increases as the education level increases in OECD countries. It can be seen that the rate of employment of higher education and high school graduates aged 25-34 is under the OECD average in Turkey, which is among the lowest countries. In the under high school level, it can be seen that it is lower than the employment average in OECD countries, however, there is a better employment

level compared to the other two educational levels. When we look at the employment rates in OECD countries individuals aged between 25-64, it can be seen that similar to the 25-34 age group, the employment rates in higher education and high school graduates in Turkey are under the OECD average and is one of the lowest rates together with Greece. Together with this, the employment rate for individuals with less than a high school education is under the OECD average, however, is higher than some countries such as Ireland, Belgium and Poland (Figure B.6.3). This data demonstrates that the employment opportunities in Turkey are more limited compared to OECD countries, and the low qualified work opportunities for those under the high school education level are high.

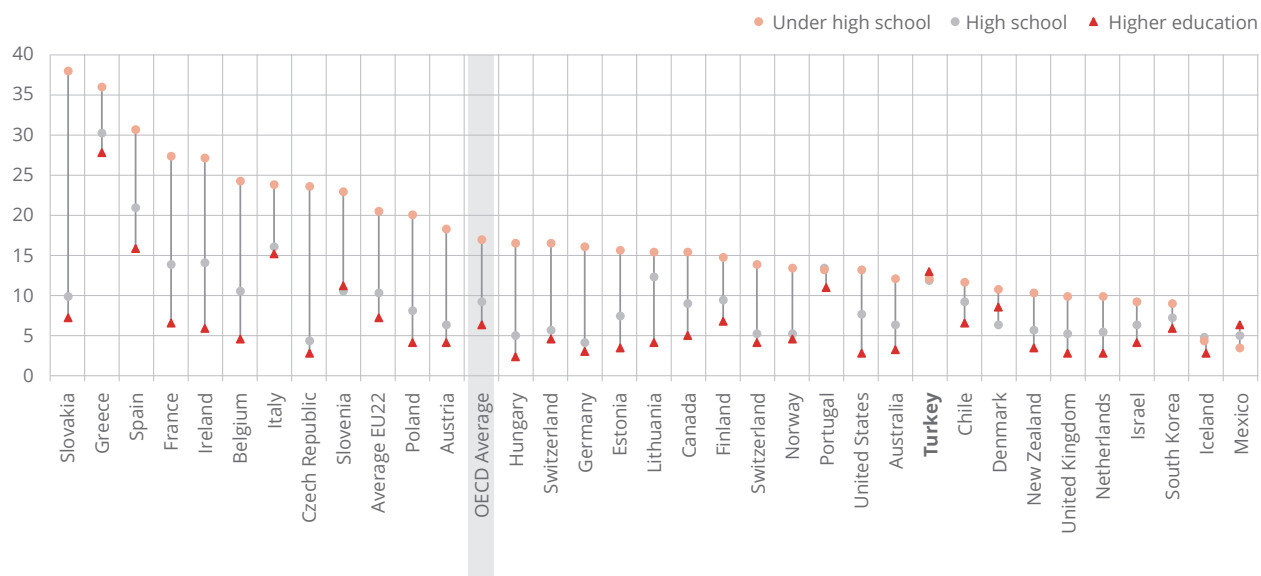
Unemployment rates of OECD countries for the 25-34 age group for 2016 are shown in Figure B.6.4. According to this, the unemployment average at the higher education level in Turkey is above the OECD average, and lower than Greece, Spain and Slovenia. When analyzed from the point of view of the unemployment rate of high school graduates, it can be seen that the unemployment rate in Turkey is higher than the OECD average, however lower than countries such as Greece, Spain, France and Ireland. When the under high school level is analyzed, it can be seen that the unemployment rate in Turkey is significantly lower than the OECD average. This demonstrates that there are problems

Figure B.6.3 Employment rates according to educational level for the 25-64 age group in OECD countries (2016)



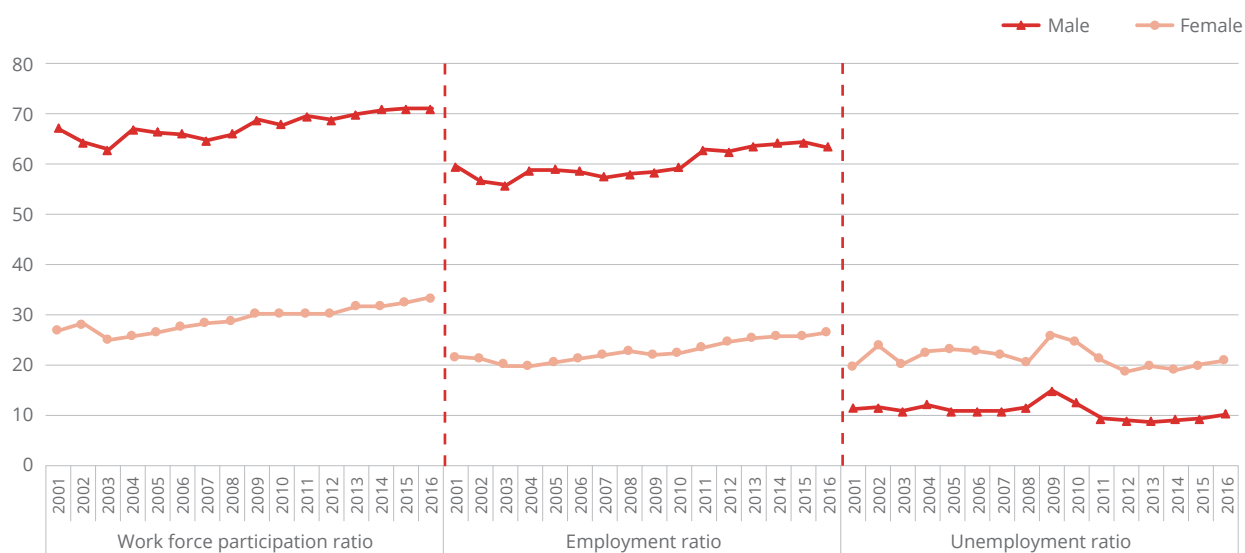
Source: OECD (2017b).

Figure B.6.4 Unemployment rates among the 25-34 age group in OECD countries (2016)



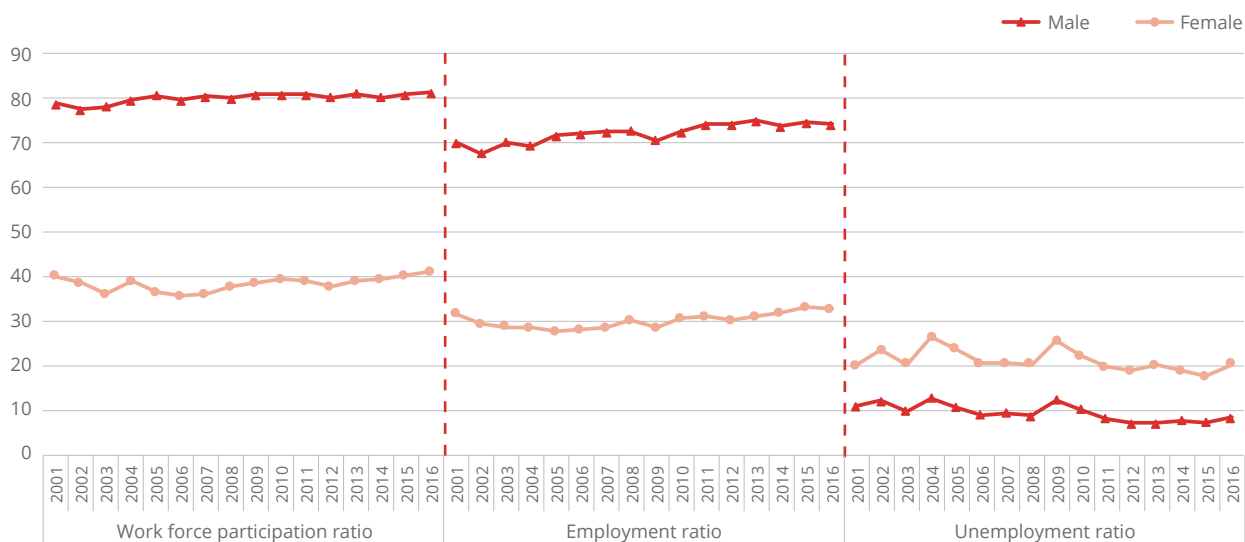
Source: OECD (2017b).

Figure B.6.5 Trends in labor statistics according to gender of general high school graduates in the 15+ age group (%) (2001-2016)



Source: Compiled using TÜİK labor statistics.

Figure B.6.6 Trends in labor statistics according to gender of high school equivalent vocational school graduates in the 15+ age group (2001-2016)



Source: Compiled using TÜİK labor statistics.

in employing more qualified workers in Turkey, however, the employment of unqualified workers is higher.

Changes in labor force statistics by gender of high school graduates in the 15+ age group between 2001 and 2016 are shown in Figure B.6.5. According to this, the rate of participation in the labor force of general high school

graduate females was 27.2% in 2001, which increased to 33.7% in 2016. Among males who are general high school graduates, the rate of participation in the labor force, which was 67.4% in 2001, increased to 71.2 % in 2016.

Similar to the participation trend in the labor force, it appears that general high school graduate males are

employed at a higher rate compared to females (Figure B.6.5).

Over time, there has been a very slight change in the employment of both women and men who are general high school graduates. The employment rates of general high school graduate men demonstrated a fluctuated trend over the years, and the employment rate which was 59.7% in 2001 reached 63.7% in 2016. The employment rate which was 21.8% in 2001 in women, reached 26.7% in 2016.

When the unemployment rates are analyzed, it can be seen that the unemployment rate among general high school graduate women is higher compared to men (Figure B.6.5). The rate of unemployment in general high school graduate men was 11% in 2011, and dropped to 10.5% in 2016. The employment rate which was 20% in 2001 in women, reached 21.1% in 2016.

Changes in labor force statistics by gender of high school equivalent vocational school graduates in the 15+ age group between 2001 and 2016 are given in Figure B.6.6. According to this data, the rate of participation in the labor force of high school equivalent vocational school graduates in the labor force was 40.3% in 2001, and it increased to 41.4% in 2016. The rate of participation in the labor force, which was 79% in 2001 among high school equivalent vocational school graduate men, increased to 81.6% in 2016.

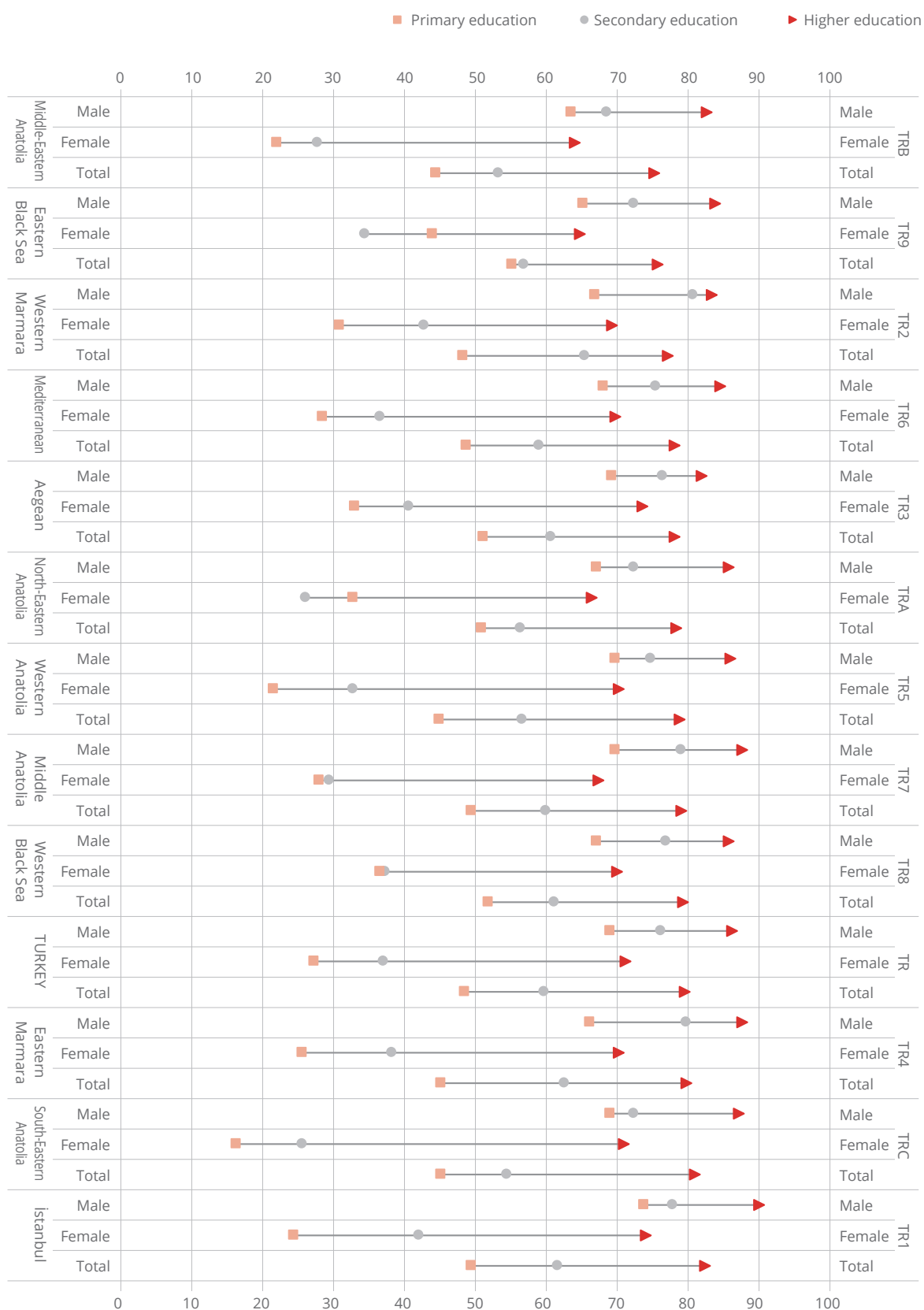
From the point of employment rates, it can be seen that men who graduated from high school equivalent vocational schools are employed at a higher level compared to women (Figure B.6.6). Employment rates of men who graduated from high school equivalent vocational schools, had a fluctuating trend over the years similar to the employment rates of general high school graduate men. Employment rate of graduates from high school equivalent vocational schools, which was 70.2% in 2001, increased to 74.5% in 2016. The rate of women who are graduates of high school equivalent vocational schools was 32% in 2001, and increased to 32.9% in 2016.

When the unemployment rates are examined, the unemployment rate among women who graduated from high school equivalent vocational schools is higher compared to men (Figure B.6.6). The rate of unemployment in men who graduated from high school equivalent vocational schools was 11.2% in 2001, and dropped to 8.7% in 2016.

In women, though this rate demonstrated a fluctuating trend between 2001-2016 and was 20.7% in 2001, it reached 20.6% in 2016. It can be seen that labor force participation and employment rates of both men and women who are high school equivalent vocational school graduates are higher compared to the labor force participation rates of general high school graduates, but that the unemployment rates are relatively lower.

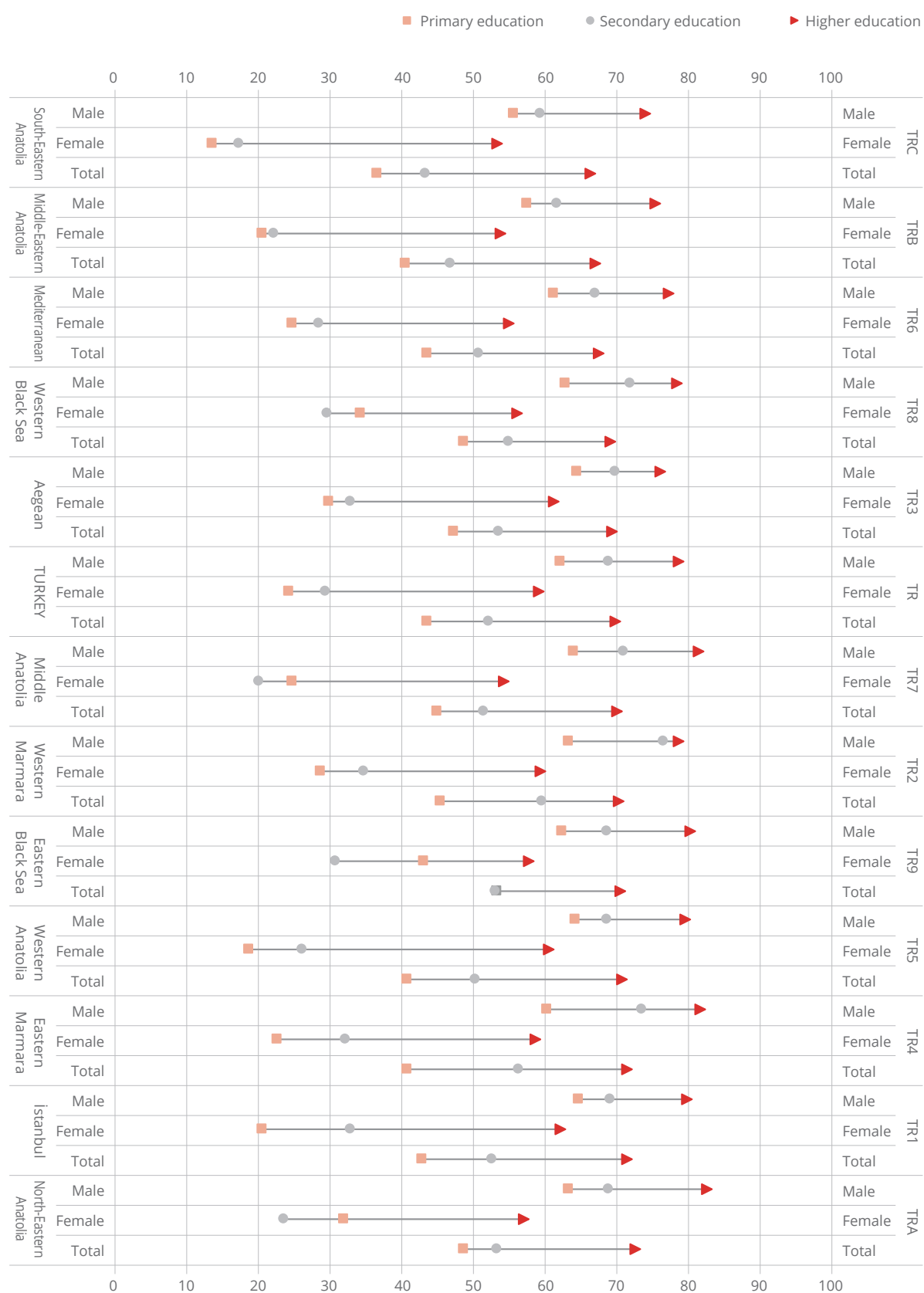
Labor force participation rates by region, educational level and gender in 2016 are shown in B.6.7. The Figure demonstrates that the labor force participation rates differ significantly by region, educational level and gender. In all regions, the rate of participation in the labor force of female and male higher education graduates, is quite higher than those in high school and its equivalent vocational schools and those under the high school education level. In addition to this, those under the high school level are the section in which participation in the labor force is the lowest both by gender and by region. Regions where participation in the labor force is the highest among graduates of high school and equivalent vocational schools are Western Marmara, İstanbul, Aegean and the Western Black Sea. The rate of participation in the labor force in these regions is higher than 60%, which is the Turkish average. When the distribution of the labor force participation rates of graduates from high school and equivalent vocational schools is examined, there is a participation of over 80% in Western Marmara region, which is closer to higher education graduates. Whereas labor force participation of graduates from high schools and equivalent vocational schools is around 80% in Central and Western Anatolia, this rate is under 70% in the Central Eastern Anatolia region, which is the lowest level. The labor force participation of women who graduated from high school and equivalent vocational schools differ by region. Whereas this rate is under 30% in Central Eastern Anatolia, North-Eastern Anatolia, Central Anatolia and South Eastern Anatolia regions, it is over 40% in Western Marmara and İstanbul. This data demonstrates that there is a big difference to the disadvantage of women in participation in the labor force in all regions. Participation in the labor force of those with an education level under the high school level is over 50% in the Aegean, North-Eastern Anatolia and Western Black Sea regions. When we look at the labor force participation of men with an education lower than high school level, whereas the rate was close to 70% in the Aegean, Western Anatolia, Central Anatolia and South Eastern Anatolia regions, it is above 70% in İstanbul.

Figure B.6.7 Labor force participation rates by region, educational level and gender (2016)



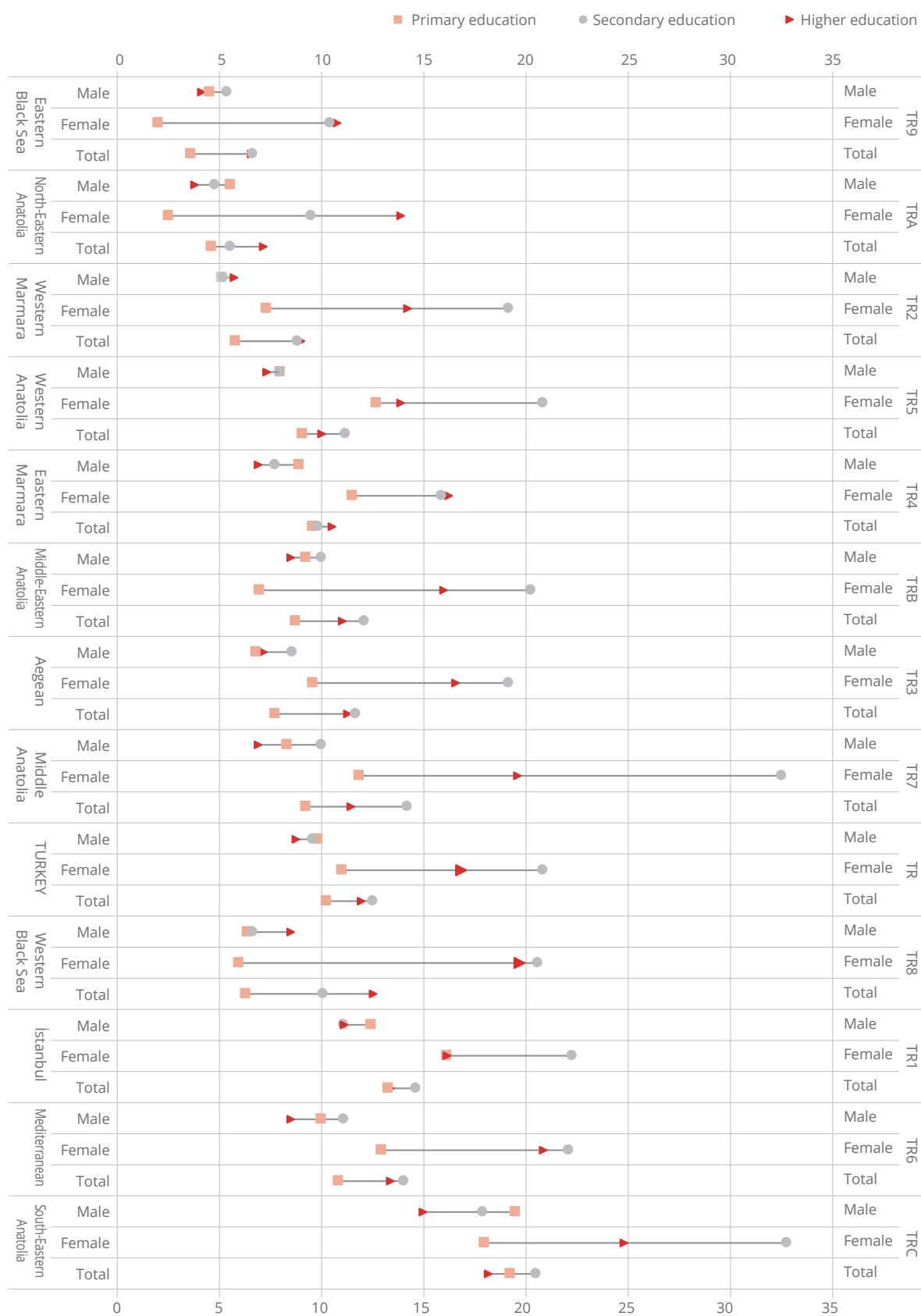
Source: The figure, prepared originally by The Outlook on Higher Education 2017 using TÜİK labor force statistics.

Figure B.6.8 Employment rates by region, educational level and gender (2016)



Source: The figure was originally prepared by The Outlook on Higher Education 2017 using TÜİK labor force statistics.

Figure B.6.9 Unemployment rates by region, educational level and gender (2016)



Source: The figure was originally prepared by The Outlook on Higher Education 2017 using TÜİK labor force statistics.

When we look at rates from the female perspective, whereas it is under 20% in South-Eastern Anatolia, it is above 30% in the Western Black Sea, North-Eastern Anatolia, Aegean and Western Marmara.

To summarize, it can be seen that the labor force participation rates increase with the increase of level of education and that the labor force participation rates between males and females are in favor of males in all regions and across all educational levels.

Moreover, as the educational level of women decreases, their participation in the labor force also declines at a higher level compared to men. There is a difference close to 40 points in the labor force participation rate of women and men with less than a high school education on average in Turkey. Whereas there is a difference close to 40 points between men and women in favour of males at the high school and equivalent vocational school level, this difference decreases to 15 points at the higher education level.

Employment rates by region, educational level and gender in 2016 are shown in B.6.8. Employment participation rates differ according to different regions, educational levels and gender. As the level of education increases, employment participation rates also increase. Whereas employment participation increases in men with the increase of educational level, in women, it can be seen that persons with less than a high school education participate in employment at a higher rate than high school and equivalent vocational school graduates in North-Eastern Anatolia, Northern Black Sea, Central Anatolia, and Western Black Sea regions. The he region where the rate of employment of graduates from high school and equivalent vocational schools have the lowest employment participation rates are Western Marmara, South Eastern Anatolia and Central Eastern Anatolia regions with rates lower than 50%.

When the employment rates of those with less than a high school education are analyzed, these are over 50% in the Eastern Black Sea, close to 50% in the Western Black Sea, İstanbul and Aegean regions, around 40% in Eastern Marmara, Western Anatolia and South-Eastern Anatolia, and under 40% in South-Eastern Anatolia.

When we look at the employment rates of men with less than a high school education , rates under 60% in South-Eastern Anatolia and Central East Anatolia, and higher than

60% in other regions. Employment rates of women with less than a high school education differ significantly on a regional basis. Whereas it is under 20% in South-Eastern Anatolia and Western Anatolia, it is over 40% in Eastern Black Sea and Western Marmara.

Unemployment rates by region, educational level and gender in 2016 are shown in B.6.9. Whereas labor participation and employment rates increase with the level of education, there is a directly proportional decrease in unemployment rates. Whereas the unemployment rates overall in Turkey are higher among high school and equivalent vocational school graduates, unemployment rates of higher education graduates are close to this and the lowest unemployment rate is in the less than high school category. Despite the fact that there is a very small difference overall in Turkey in men, the unemployment rate decreases with the increasing education level. In women, the unemployment rate of high school and equivalent vocational school graduates is above 20%, and those of higher education graduates is above 15%, and above 10% for those with less than a high school education.

This number is over 10% in Western Anatolia, Central East Anatolia, Aegean, Central Anatolia, İstanbul and the Mediterranean; over 20% in South-Eastern Anatolia, and it is close to 5% in North-Eastern Anatolia. When the rate of unemployment among high school and equivalent vocational school graduate men is analyzed, it can be seen that the rate is below 5% in North Eastern Anatolia, whereas it is over 10% in Central Eastern Anatolia, İstanbul and the Mediterranean, and over 15% in South-Eastern Anatolia. When considered from the perspective of females, the rate is below 10% in North-Eastern Anatolia and over 30% in Central Anatolia and South-Eastern Anatolia.

When the unemployment rate of persons with less than a high school education is considered, it is below 5% in the Southern Black Sea and North Eastern Black Sea region, and over 10% in İstanbul and the Mediterranean and over 15% in South Eastern Anatolia. When considered from the perspective of males, it is below 5% in Eastern Black Sea, North Eastern Anatolia and Western Marmara, it is above 10% in İstanbul and the Mediterranean and over 15% in South Eastern Anatolia. When considered from the female perspective, it is below 5% in the Black Sea and North-Eastern Anatolia, and over 10% in Western Anatolia, Central Anatolia, the Mediterranean and Eastern Marmara, and over 15% in İstanbul and South Eastern Anatolia.

A direct relationship is established between education and social wealth and economic growth. As a result of this, countries develop policies towards increasing the duration of schooling. In 2012, Turkey decided to shift to 12-year mandatory education in order to ensure that everybody has at least a high school education and to increase the schooling period (Çelik, Boz, Gümüş, and Taştan, 2013). Following this decision, the rate of those with at least a high school education in the 18-21 age group increased rapidly and the graduation rate from secondary schools increased to 61% in 2016. In this period, the graduation rate in women increased from 49% to 64%, and from 46% to 58% in men (see Figure B.1.1).

Whereas rates of starting and completing secondary education were 53% in total, 63% in girls and 46% in boys in the 2008-2009 educational term, these numbers increased to 83% in total, 94% in girls and 73% in boys in the 2015-2016 educational year (see. Figure B.1.2). When the graduation rates from secondary school among those under 25 years of age in OECD countries are analyzed, Turkey is one of the countries with the highest increase in graduation rates between 2005-2015. Despite the fact that the rate of graduation from secondary education for those under 25 in Turkey increased to 68% in 2015, this remained below 80%, which is the OECD average (see Figure B.1.5). With the implementation of 12-year mandatory education and the increase in schooling rates, it is expected that the graduation rates from secondary education will increase further in coming years. Another issue that is striking in Turkey is the fact that the graduation rate among girls is quite higher compared to boys. A similar situation is also valid for OECD countries. It can be seen that in all OECD countries, girls graduate from high school at a higher rate than boys. This can be explained by the fact that boys postpone their graduation when compared to girls and they have higher class repetition rates and that the academic success of girls is higher and their attitudes towards school is more positive (OECD, 2017b).

When the rates of persons with at least a high school education across regions are examined, it can be seen that the graduation rates have increased significantly in all regions between 2011-2016, and this increase was more significant in girls compared to boys. However, despite this progress, a significant inequality has been continuing in the graduation rates among different regions. According to 2016 year data, regions where the rate of at least high school graduates in the 18-21 age group is the highest are respectively Eastern Black Sea (77%), Western Black Sea (74%) and Western Marmara (73%), and the graduation rates are below 40% in South-Eastern Anatolia and below 50% in Central East Anatolia (see. Figure B.1.3). The rate of persons with at least at high school education among the young population (18-21) is quite high compared to the rate those with at least a high school education in the middle age (40-44) population. Whereas the difference between young and middle age women who are at least high school graduates was 27.9% in terms of gender, the difference between young and middle age men was 13% (see Figure B.1.4). This data demonstrates the development in the schooling and graduation rates in society and in particular in women in Turkey in recent years.

TIMSS 2015 scores of 4th grade students in Turkey did not demonstrate significant progress according to the previous research and increased by only 20 points in science and 14 points in math. Despite this progress, the average of 4th grade students in the two tests was below the international average. Similarly, both math and science score averages in TIMSS among 8th graders increased stably, and the science and math test scores increased by 10 and 6 points in TIMSS 2015 compared to previous years.

Despite this increase, the success of 8th graders was under the TIMSS international average (see Figure B.2.1 and Figure B.2.2). In addition to this, girls in 8th grade in Turkey are more successful in science and math fields compared to boys (see Figure B.2.3). The proportional distribution of competency levels of 8th grade students who participated in TIMSS 2015 research from Turkey demonstrates that there is an accumulation towards low level and below low level. 43% of students demonstrated low level and lower performance in 4th grade math tests, 44% in sciences; and 41% of students demonstrated low level and lower performance in 8th grade science and 58% in math (see Figure B.2.4).

These rates which are highly above the TIMSS average, demonstrate that a significant majority of students in Turkey pass to a senior class without even having basic competencies and subsequently graduate from the system. To put it more clearly, it is expected that students who are at a low level in math at the 8th grade level have some knowledge about integers, decimals, transactions and basic graphics. However, 30% of the 8th grade students could not even reach the lowest level (MONE, 2016a).

In terms of scores received in both math and science field in TIMSS 2015, students in South Eastern Anatolia, North Eastern Anatolia and Central Eastern Anatolia regions in 4th grade, and students in Central Eastern Anatolia, South Eastern Anatolia and Eastern Marmara regions in 8th grade demonstrated performance at a very low level compared to Turkey's national average. Moreover, there are 90 points between the Western Black Sea and Aegean regions, which are the ones that are the most successful in 4th grade math and science classes, and in South-Eastern Anatolia, which is the least successful region, and there is a 70 points difference with the North Eastern Anatolia region. A similar situation is also valid for 8th grade math and science tests. A difference of 70-80 points is observed between the most successful regions, namely Western Marmara and Eastern Black Sea, and the Central Eastern Anatolia and South Eastern Anatolia regions, which are the least successful (see Figure B.2.5 and Figure B.2.6). This data demonstrates that the educational equality between the regions continues to exist in a significant manner in 4th and 8th grade classes. In particular, in these two regions where a disadvantage exists, it is considered that the elements that negatively affect the success of these regions include the fast circulation of working teachers, the lack of teachers and lack of experience (Eğitim-Bir-Sen, 2016).

Turkey's science, reading and math score averages were quite below the OECD countries' average in PISA 2015 research, and Turkey placed 52nd in science, 50th in reading and 49th in math among 70 countries (see Figure B.3.1). Turkey has stably increased compared to the past in its average success in the fields of science, reading and math in PISA 2009 and PISA 2012. This increase in average scores in Turkey in PISA 2009 and PISA 2012 is considered to be a very important development when considered together with the increase in schooling rates in particular. However, the average

scores in PISA 2015 decreased by 38 points in science, 28 points in math and 47 points in reading (see Figure B.3.2). Taking into account the fact that each 30 points in PISA 2015 corresponds to an educational year (OECD, 2016), the decline in Turkey's scores expresses a decline of 1 to 1,5 educational years according to PISA 2015 calculations.

In the five PISA studies in which Turkey has participated, girls have proven to be more successful than boys in the fields of science and reading. In the science test, there is a difference of 7 points in favor of girls and 28 points in the field of reading. Males are more successful compared to females in the field of math, excluding PISA 2012 results (see Figure B.3.3). However, taking into account other national exams and school scores, it can be seen that females are generally more successful compared to males in Turkey (Bulut, Gür and Sriraman, 2010).

When we look at the PISA 2015 reading average, it can be seen that females are more successful than males and the difference of success is 27 points.

In the field of science, males demonstrate 4 points higher performance compared to females. This success is statistically significant though the point difference is low. In countries such as Finland, Albania and Bulgaria, girls demonstrated 15 points higher success than boys in the field of science. In the PISA 2015 math section, boys were more successful. In 9 countries including Finland, Macao (China), Malaysia, girls were more successful than boys in the field of math.

In PISA 2015 research, the average scores received in all three areas increased from eastern to western Turkey on a regional basis (see Figure B.3.4). For example, whereas the math score is 431 in Western Marmara, it is 370 in Central Eastern Anatolia. Taking into account the fact that a 30 point difference in PISA 2015 corresponds to one educational term, it is foreseen that there is a difference of two educational years in two regions. Inequality between regions can be seen to a significant extent in the past PISA studies. An analysis made of PISA 2012 data demonstrated not only that the reason for failure in Central Eastern Anatolia and South Eastern Anatolia regions was not only a result of being disadvantaged in socioeconomic terms, but also that there was a problem in the quality of education in these regions. One of the factors that affects the quality of education in these two regions is that the schooling rates of children in the 15 year old age group increased more rapidly compared to other regions. The fact that the reason for inequality in these regions is different from socio-economic disadvantage, makes it necessary to take steps towards developing the quality of education (Polat, 2014). In addition to infrastructure shortcomings, factors such as high teacher turnaround and teachers with less experience working in these regions (Eğitim-Bir-Sen, 2016) also have a negative effect.

According to PISA 2015 data, a significant difference of success is observed between school types in terms of average scores in the fields of science, reading and math. In all three fields, students of Anatolia, social sciences and science high school obtained a success score above Turkey's overall average, and students of science and social sciences high schools reached an average score of 500 (see Figure B.3.5). In other words, the difference between score averages of the the most successful science high school and of the multi-program Anatolian high school, which is the least successful, is around 150 points, and this difference is around 120-140 points with Imam Hatip high schools. As expressed above, taking into account the fact that every 30 points in PISA 2015 corresponds to

one educational year, it is revealed that there is a difference of 4-5 educational years between the most successful high schools and the most unsuccessful high schools in Turkey. To put in more clearly, taking into account the fact that mostly the tenth grade students enter PISA in Turkey, the performance of science high school students is at a tenth grade level, and the performance of multi-program high school students is at a middle school fifth grade level, and the performance of Imam Hatip high school students is at a middle school sixth grade level. Significant difference is similarly seen between the schools in PISA 2009 and PISA 2012(World Bank, 2013; Polat, 2014). Apparently this situation demonstrates that the fact that a very few number of students in Turkey receive a qualified education and the quality of education of other schools is quite problematic, still continues (World Bank, 2005). Moreover, these results demonstrate that there is a clear hierarchy between the schools and that the schools are ranked from top to bottom according to the order of success. In other words, this demonstrates that social layering in schools in Turkey is higher compared to the OECD average. The basic reason for the difference between schools is the placement of students by layering. Moreover, children who are the most disadvantaged in socio-economic terms enter vocational high schools which have the lowest level of success, and those who place within the top 20% enter Anatolian high schools and science high schools (World Bank, 2013).

The fact that per student spending in schools with high success levels where socioeconomically advantaged people go is high makes the existing inequalities even greater (Polat, 2014).

The existence of hierarchy between the high schools as seen in PISA is also visible clearly in the higher education transition exams. Whereas graduates of more academic types of schools, such as social sciences high schools, private science high schools, private high schools, teachers' high schools, science high school, basic high school and Anatolian high school are placed in undergraduate programs; most of the graduates of high schools providing vocational and technical education are placed into associate programs and very few are placed into undergraduate programs (see Figure B.5.9). This data demonstrates that there is a big difference between schools in terms of placement into undergraduate programs. As it was indicated above, due to this clear difference that occurred over years, a solid hierarchy has emerged between the schools. This situation created an intense pressure among students and families to go to good schools (Çelik, 2015; Gür, Çelik and Coşkun, 2013). With the Transition from Basic Education to the Secondary Education (TEOG) system, which ranks all students centrally and places them into a school, this hierarchy has gotten even bigger. With TEOG, all schools have entered an environment where student success has become homogeneous. This system, which groups and orders all students, was abolished after President Recep Tayyip Erdoğan's statement of on the necessity to abolish TEOG on September 15th 2017. The abolishment of TEOG, which has deepened the crisis in the education system, is a positive development (Eğitim-Bir-Sen, 2017).

Rates of students who participated in PISA 2015 from Turkey who demonstrated high level performance in the fields of science, reading and math, are below the OECD country averages. As opposed to this, the rate of students who demonstrate a low level of success in all three fields is above the OECD averages (see Figure B.3.6). One of the important data in PISA 2015 is the distribution of students according to competency levels. Whereas the rates of those who demonstrate high level performance in the fields of science, reading and math could not even reach 1% in three fields in Turkey, this rate is around 8% in each area in OECD countries . The rate of students who

demonstrate performance under the basic competency level is quite low compared to the OECD average. Whereas the rate of students at level 1 and below in Turkey is 44.4% in science, 40% in reading and 51.3% in math, the OECD average is 21.3% in science, 20.1% in reading and 23.4% in math (See, Figure B.3.6). This data demonstrates that almost half of the students in Turkey reach the high school level even without having basic level of knowledge.

The fact that students success is low in international exams such as TIMSS and PISA is also seen in the exams for transition to university. When the average net scores in YGS are considered, in 2017 the average net score in a math test of 40 questions is 5.1; in science 4.6, in Turkish 17.3 and in social sciences 12.3 (see Figure B.4.1 and Figure B.4.2). When the tests in LYS are analyzed, it can be seen that the average net scores of students differed over time and the net averages are still low. This data demonstrates that the fact that the rate of students under basic competency rates, which is seen in exams such as TIMSS and PISA, is also supported in exams for transition into higher education.

Whereas the number of applicants in the university exam in 2008 was 1 million 645 thousand, this number increased to 2 million 266 thousand in 2017. Around one third of those who applied to the exam comprise people who were previously placed in a university and who graduated (see Figure B.5.1). The rate of placement among the applicants to the university entrance exam between 2008-2010 was 36,4% in 2017 (see Figure B.5.2). It can be seen that almost one third of senior class students were placed in a higher education program, and the remaining could not be placed (see Figure B.5.3). Although the number of persons who were placed in a higher education program increased to 980 thousand in 2015, there has been a falling trend in the last two years to 825 thousand, and the gap between the applicants and those who were placed reached the top level in 2017 (see Figure B.5.10). As it can be understood from this data, there is a problem of alignment between the supply (quotas) and demand (applications) in higher education (Çetinsaya, 2014; World Bank, 2007; YÖK, 2007). After the slow down of the speed of opening new public universities, decreasing the quotas of some programs in higher education such as basic sciences and the quota in geology, mining and oil engineering and computer and teaching technology (BÖTE) departments remaining unfilled after the implementation of an application order quota to engineering and teaching programs, the problem between the supply and demand in higher education grew. Many countries targeted to enlarge their higher education systems in the aftermath of the Second World War and converted their higher education system first to a massive system from an elite system, and thereafter to a more universal system in order to protect the balance between supply and demand in higher education. Turkey has been reluctant in enlarging the higher education system for many years and as a result the higher education system continued its elitist structure until recently (Arlı, 2016; Gür, 2016a, 2016b). As a result of opening at least one public university in all cities in order to enlarge the higher education system between 2006-2008 with the opening of 23 new universities in 1992, the higher education system has become more massive and turned into a universal system which is accessible by almost all (Günay and Günay, 2011; Gür et al., 2017).

In 2017, the problem with the quotas remaining unfilled to a significant extent, was experienced in the process of placements into higher education. Whereas the associate quotas were 437 thousand, 211 thousand of these quotas remained empty after additional placements (See Figure B.5.12). Whereas the quota allocated to undergraduate programs was 474 thousand in 2017, 111

thousand of these quotas remained unfilled as a result of additional placements (see Figure B.5.13). The fact that the students prefer programs with higher employment areas and that programs with less employment opportunities are less preferred is the most important factor that affects the quota to remain empty. However, another factor is that geology, mine and oil engineering in the field of engineering and BOTE programs remain empty after the ranking quota of 240 thousand put in place particularly in the engineering and teaching areas. Due to the fact that candidates after 240 thousand do not prefer these programs, a significant part of these programs remained empty. This situation demonstrates that the problem between the supply and demand in the higher education entrance system in Turkey has continued at a significant level. The fact that almost one third of associate and undergraduate quotas remained empty in 2017, demonstrates the inefficiency of the higher education placement system. Moreover, this demonstrates that the ranking threshold is not a correct practice in terms of the placement system in particular in the engineering and teaching fields.

Participation rates of general high school graduates in the labor force between 2001 and 2016 increased from 51% to 54.4%. Participation of general and vocational high school graduates in the labor force is quite low compared to higher education graduates (79.7%). The employment rates between 2001-2016 increased from 44.2% to 47.2% among general high school graduates, and from 57.2% to 58.2% for high school graduates. Compared to high school graduates, it can be seen that the employment rate of high school graduates is lower. Moreover, the unemployment rate of vocational high school graduates is quite lower than general high school graduates. This demonstrates that vocational education is an advantage in terms of employment in labor markets though at a limited level (see Figure B.6.1).

Turkey is one of the countries where the rate of employment of higher education and high school graduates aged 25-34 is under the OECD average and lower. Whereas in Turkey the employment rates in the 25-34 age group in 2016 are higher than the OECD average, it is lower than such countries as Greece, Spain, France and Ireland (see Figure B.6.4).

The rate of participation in the labor force of women who are general high school graduates, was 33.7% in 2016, and 71.2% for men. It can be seen that similar to participation trends in the labor force, men who are general high school graduates are employed at a higher level than women, and from the point of unemployment rates, the unemployment rate among general high school graduate women is higher compared to men (see Figure B.6.5). It can be seen that labor force participation and employment rates of both men and women who are high school equivalent vocational school graduates are higher compared to the labor force participation rates of general high school graduates, but that the unemployment rates are relatively lower. It is thought that, labor force participation (see Figure B.6.7), employment (See Figure B.6.7) and unemployment (see Figure B.6.7) rates of those who graduate from high school and equivalent vocational schools, differ between regions and between genders in different region which relates to the economic development levels of regions, differences in their socio-cultural structures and the difference between employment opportunities between regions.

- Despite the fact that the high school graduation rates have rapidly increased in the last years in Turkey, they remain far below the OECD averages. In addition, the rate of high school graduates significantly varies by region. Taking into account the relationship between education and individual and social wealth, emphasis should be put on disadvantaged regions and actions should be carried out to increase high school graduation rates.
- Both the results of international student success studies such as TIMSS and PISA, and the results of national exams for transition to higher education demonstrate that a significant majority of students in Turkey lack knowledge at the basic level. This data means that students pass to a higher class or grade without even reaching a minimum level of knowledge. The Ministry needs to make comprehensive research towards understanding the reasons for the low level of success. Moreover, it should be ensured that students do not pass to a higher class or grade without acquiring at least the basic levels of knowledge, and that these students acquire basic skills by establishing a remedial mechanism.
- TIMSS and PISA data demonstrate that there is a significant inequality in educational success among different regions in Turkey. Disadvantageous regions should have priority in the distribution of human and physical resources in order to mitigate educational inequality among regions.
- According to PISA and YGS data, there is a significant difference of success between high schools in Turkey and there is a strong hierarchy. This leads to the emergence of a greater hierarchy between high schools. The most successful and the least successful students are grouped homogeneously and placed into the same schools. This situation creates significant pressure on the secondary education system. Moreover, families engage in a very intense effort in order to send their children to better high school. For this, a secondary education system should be established where the student success is heterogeneously distributed. In this way peer learning could occur and the learning motivation of students could increase. Moreover, when the hierarchy between high schools decreases, the pressure on the secondary education system as a whole and on the transition system in particular will be decreased.
- It is expected that the demand and pressure on the higher education transition system will increase more in coming years. In order to solve the problem of inequality between supply and demand, it is necessary to ensure that the higher education system grows, that new universities are opened and the quotas are increased. In addition to this, a significant number of programs were unoccupied in 2017. There is a need to abolish the ranking quota in order to use the quota of the existing programs more efficiently. In addition to that, there is a need to reexamine the processes employed by universities and YÖK to open new programs and approve them as the quota of certain programs cannot be filled.

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CHAPTER



TEACHERS

INDICATOR C1	Number and Gender Profile of The Teachers
INDICATOR C2	Teacher Supply and Demand
INDICATOR C3	Teacher Salaries
CHAPTER C	Highlights
CHAPTER C	Recommendations

Teachers are one of the most important elements of education and training activities, and alongside students are indispensable. In particular, it is known that a common feature amongst the most successful educational systems are such works as Trends in Mathematics and Science Study (TIMSS) and The Programme for International Student Assessment (PISA). Moreover, many research conducted from past present day share the same idea that teachers are the most important in-school factor that impacts the success of the student (Coleman et al., 1966; Rivkin, Hanushek and Kain, 2005). These studies demonstrate that teachers are the most determining factor in the success of disadvantaged students in particular. A quality teacher is considered as the most important element that will eliminate the disadvantages of disadvantaged children. Research conducted demonstrates that factors such as the academic knowledge of the teacher, the process of preparing for the occupation, and his/her experience are quite important in the success of the student (Darling-Hammond, 2010). Due to such importance attributed to teachers, the Director General of the United Nations Education, Science and Culture Organization (UNESCO) Irina Bukowa, Director General of International Labor Organization Guy Ryder, Executive Director of United Nations Children's Fund (UNICEF) Anthony Lake, United Nations Development Program (UNDP) Director Helen Clerk and Educational International Secretary General Fed Van Leeuwen stated in a joint message that "an education system is only as good as its teachers. Teachers are essential to universal and quality education for all:" (UNESCO, 2015, s.3).

Taking into account the importance of teachers for the education system, the size of resources allocated to teachers, and how this resource differs according to experience and education level, is important. In addition to this, working conditions and environment are other elements affecting the quality of the education system. As a consequence, it is highly important to demonstrate the indicators concerning the quality and quantity of teachers, who are the most important actor in the educational system, and to analyze the current status in terms of these indicators and to make recommendations for improvements that are forward-thinking.

In this section, some basic indicators related to public and private educational institutions in Turkey are demonstrated with international comparisons. Some of the leading indicators are the numbers of teachers and the gender profile of the teachers, the distribution of teachers by experience and the teacher salaries. Analysis related to teacher supply and demand is also discussed.

Within the framework of this indicator, the distribution of the number of teachers by gender and education level in public and private schools, is presented. In addition to this, the distribution of rates of teachers by region was analyzed on the basis of gender.

Number of Teachers

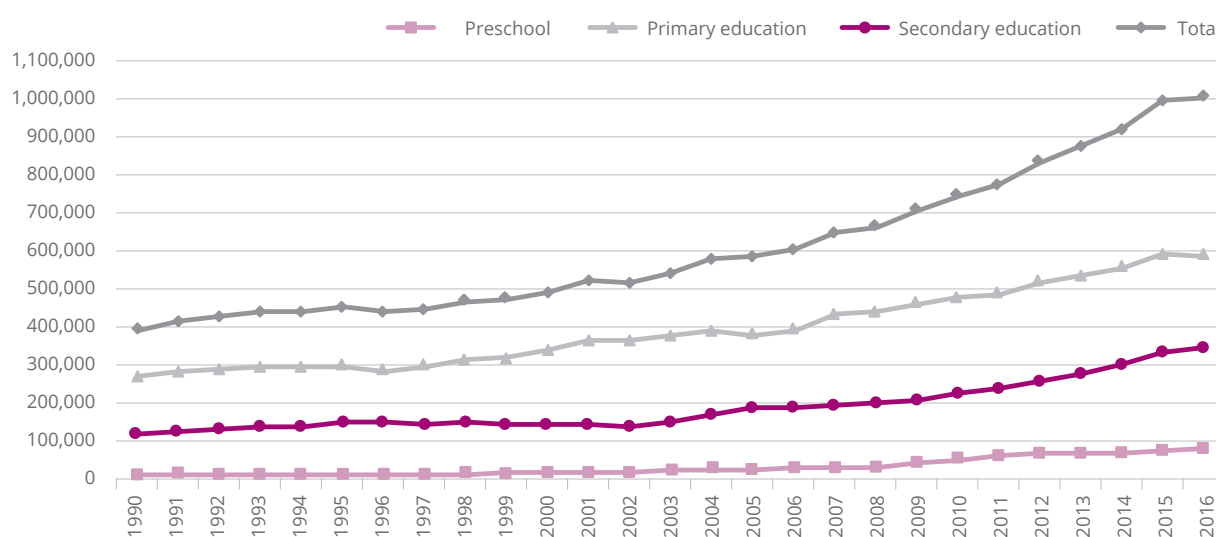
The distribution over the years in the numbers of teachers by education level is given in Figure C.1.1. As it can be seen, the number of teachers working in the public and private sectors has demonstrated a continuous increase trend over the last twenty years. There was a significant increase in the number of teachers between 1990-2016, and the number of teachers which was 390,449 in 1990, increased to 513,556 in 2002.

Particularly in the period of the AK Party governments, a high number of teachers were employed. As a result

of this, the number of teachers between 2003-2015 increased faster, reaching 1,005,380.

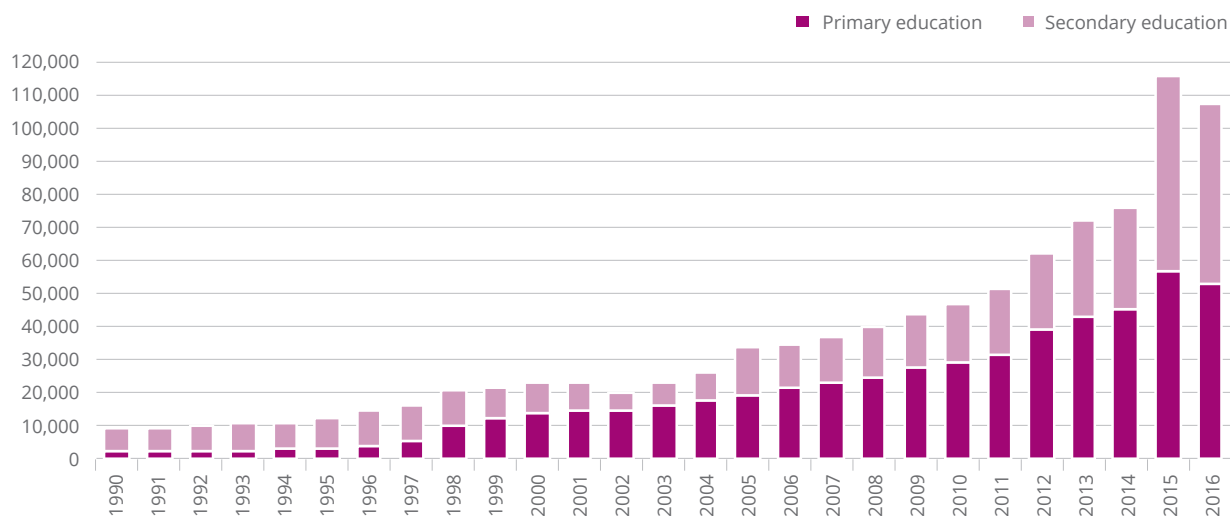
When the numbers of teachers is analyzed according to education level, it can be seen that the highest number of teachers were employed at the elementary education level. The number of teachers working in elementary education constitutes around 60% of the total number of teachers. The number of teachers which was 266,835 in 1990, increased to 587,415 in 2016. Whereas the number of teachers in secondary education was 116,490 in 1990, this reached 341,581 in 2016. After 2012 when the mandatory education was increased to 12 years, the number of secondary education teachers grew in a more rapid manner. The number of preschool teachers increased from 7,124 to 76,384 between 1990-2016. After the adoption of the decision to disseminate preschool education in 2009, the number of preschool teachers started to increase at

Figure C.1.1 Trends in the number of teachers working in the public and private sector by education level (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure C.1.2 Trends in the number of teachers in private elementary and secondary education schools (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

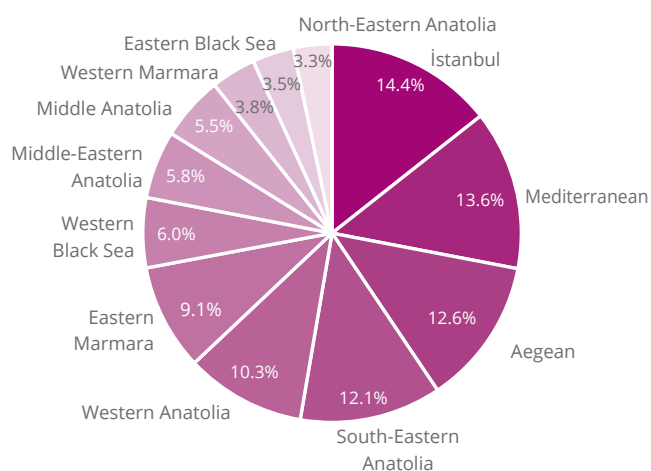
a more rapid pace. In 2009, a significant part of teacher appointment quotas was allocated to preschool teaching. To put it in more concrete terms, the number of teachers which was 29,342 in 2008 reached 42,716 in 2009. A much higher quota was allocated compared to the past in new appointments to preschool teaching in the following years

Figure C.1.2 demonstrates the change over the years in the number of teachers working in elementary and secondary education. According to this, the number of teachers in private elementary schools and secondary education has rapidly increased after 1990 and reached 52,871 in

elementary education and 54,369 in secondary education in 2016. When the figure is examined, it can be seen that there was a short term decline in the number of teachers working in private schools following the economic crisis in 2001, however the number of teachers hit a much higher increased speed within a couple of years.

The total number of teachers, which was 23 thousand in 2000, declined to around 20 thousand in 2002, and after a long term increase in speed thereafter, reached 76 thousand in 2014. This number exceeded 115 thousand in 2015 with the implementation of incentives geared towards

Figure C.1.3 The distribution of teachers by region (2016)



Source: Compiled using statistics published by MONE.

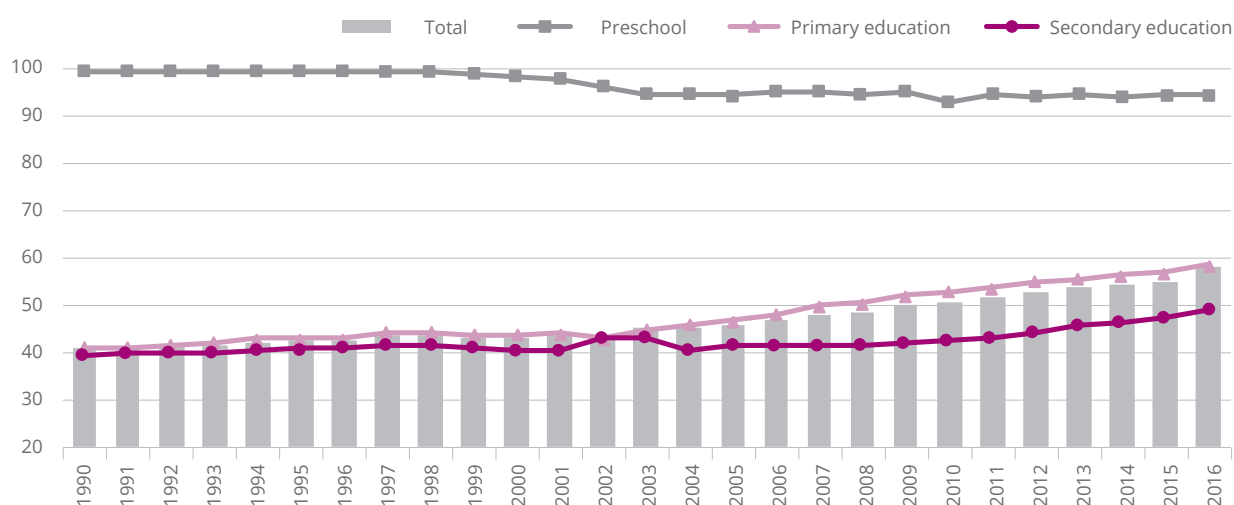
students going to private schools and the conversion of cram schools into basic high schools. However, after 2015, there was a decline of 9 thousand in this number. This decline could be explained by the closure of private schools that were determined to be linked to FETO following the failed coup attempt in 15th of July.

Figure C1.3 demonstrates the distribution of teachers by region. As expected, the region with the highest number of students, is Istanbul. The total number of teachers working in Istanbul is 139,082. Regions which have the highest number of teachers following Istanbul are the Mediterranean (132,067), Aegean (121,743) and South-Eastern Anatolia (117,222) regions. The three regions with the lowest number of teachers are North-Eastern Anatolia (31,984), Eastern Black Sea (34,206) and Western Black Sea (37,138). In terms of geographical regions, more than one in four of all teachers working in Turkey work in the Marmara region.

Gender of Teachers

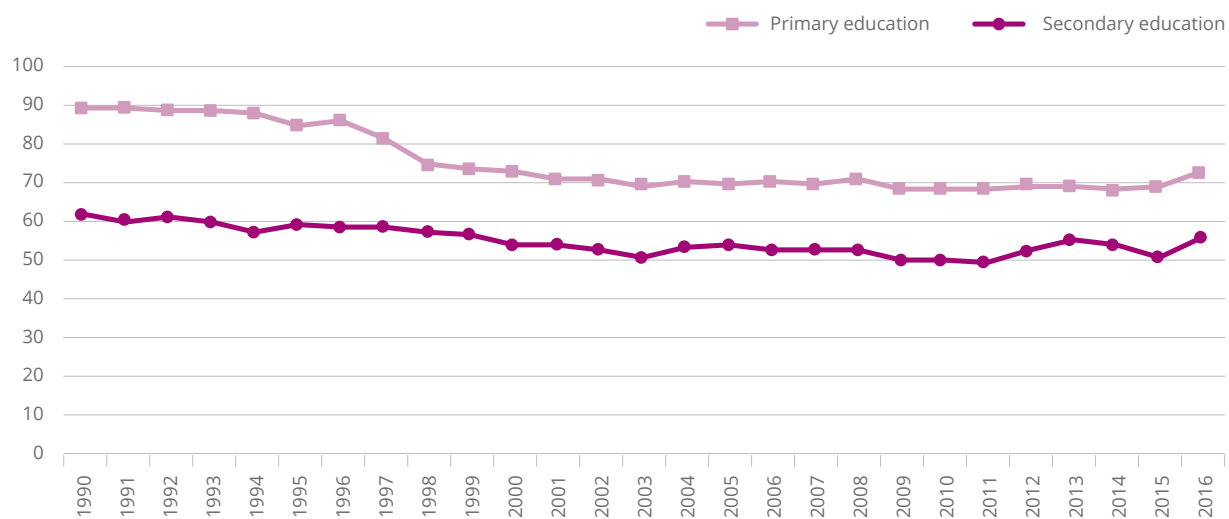
Figure C.1.4 demonstrates the change in the rate of female teachers between 1990-2016. The rate of female teachers amongst the total number of teachers between 1990-2016 increased from 41% to 58.1% in total, from 41.2% to 58.5% in elementary education, and from 39.4% to 49.1% in secondary education, and in preschool education declined from 99.6% to 94.7%. This data demonstrates that the rate of female teachers demonstrated significant progress over time in all levels and overall if you exclude preschool. Rates of female teachers working in private schools between 1990-2016 are given in C.1.5. When these rates are examined, in the last 20 years, it is observed that there is

Figure C.1.4 Trends in the rate of female teachers by level (1990-2016)



Source: The figure, prepared originally by Eđitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure C.1.5 Trends in the rate of female teachers in private elementary and secondary education schools (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

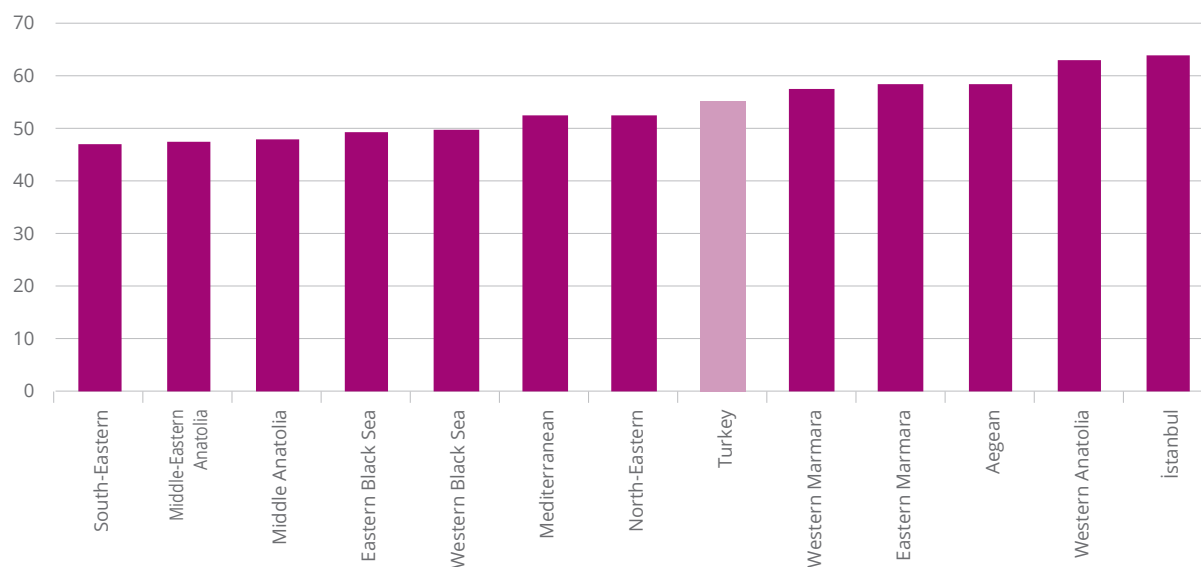
a trend different from the trend experienced in the total rates of female teachers. In particular, the rate of female teachers working in private elementary schools between 1991-2001 decreased from 90% to 70%, and this rate mostly remained fixed between 2001-2015.

the 1990s, which also fluctuated. Whereas this rate was around 61% in 1990, it declined to 53% in 2000 and to around 50% in 2010. The rate of female teachers working in private elementary education was 73.1% and 55.8% in secondary education in 2016.

It can be observed that the rate of female teachers working in private secondary schools had a declining trend after

Figure C.1.6 demonstrates the distribution of female teachers working in public and private schools by region

Figure C.1.6 Distribution of female teachers according to region (2016)



Source: Compiled using the statistics published by MONE.

Figure C.1.7 Trends in the rates of female students among newly enrolled students in education faculties (2007-2016)

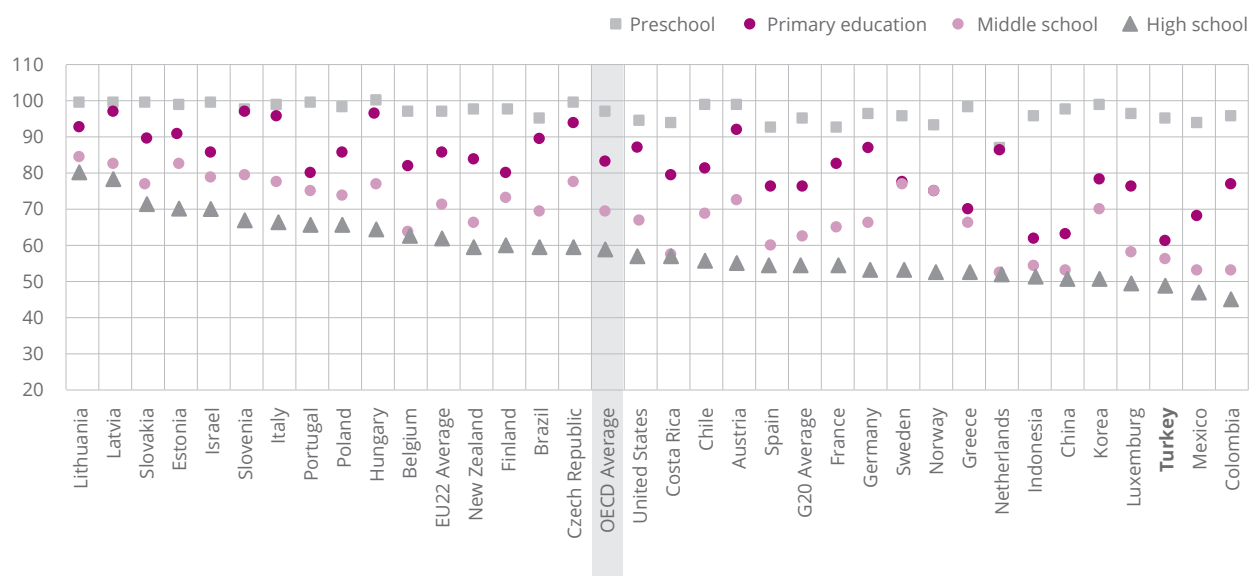


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using the data obtained from ÖSYM and BHE web site, was updated by the authors.

in 2016. When the figure is examined it can be seen that the regions with the highest number of female teachers are Istanbul (64.1%) and Western Anatolia (62.9%), and the regions with the lowest female teacher rates are South-Eastern Anatolia (46.9%) and Central East Anatolia (47.4%). It can also be said that the rate of female teachers increases from east to west.

Figure C.1.7 shows the change in the rates of female students amongst the total number of students enrolled in education faculties between 2007-2016. According to this, it can be seen that the rate of enrollment of females in the faculty of education increased between 2007-2016. The rate of women in newly enrolled in the education faculty, which was 53% in 2007, increased to 64.5% in 2016.

Figure C.1.8 Rates of female teachers by education level in OECD countries (2015)



Source: OECD (2017)

Rates of female teachers working in the Organization for Economic Cooperation and Development (OECD) in 2015 are given in Figure C.1.8. When the comparative data for 2015 is examined, it can be seen that Turkey is one of the countries with the lowest rates of female teachers. Almost all of the teachers in many countries at the preschool level comprise female teachers. At this level there seems to be only seven countries which have female teachers at a lower level than in Turkey (95%).

These countries are the USA (94.1%), Mexico (93.9%), Costa Rica (93.7%), Norway (93%), Spain (92.6%), France (92.3%) and the Netherlands (87.1%). The OECD average rate of female teachers working at the preschool level is around 96.8%. A similar situation is also applicable at the primary and middle school levels. Despite the OECD average of 83% at the primary school level, Turkey has the lowest rate

of female teachers with an average of 61%. At the middle school level, the OECD average is 69.2% and the average in Turkey is 56%. There are five countries at this level that have female teacher rates lower than that of Turkey. These countries are Indonesia 54.1(%), China (52.9%), Columbia (52.8%), Mexico (52.7%) and the Netherlands (52.1%). At the high school level, despite the OECD average of 58.9%, Turkey (49%) is one of the three countries with the lowest rate of female teachers along with Mexico (47%) and Columbia (45.3%). These results demonstrate that the teaching profession is generally dominated by females in developed countries. Although teaching is a preferred profession for women in Turkey, particularly in recent years, the rates of female teachers remains below the OECD level in all grades. Moreover, it can be seen that in OECD countries including Turkey, the rate of female teachers decreases with the increase of educational level.

The increase in the rates of participation in education, increase of population and efforts towards the improvement of education environments have led to the emergence of a significant gap in the number of teachers in many developing countries. Furthermore, the status of the profession of teaching and its working conditions also contributes to this gap of teachers that has been developing as a result of many individuals leaving the profession in some countries. In addition to these reasons, the need for teachers has been ongoing as a result of the retirement of existing teachers in all countries. The imbalance between supply and demand, which arises from the inability to find candidate teachers to satisfy the demand for teachers or on the contrary from having mass of teacher candidates that is high above the demand, continues to exist as an important problem in many countries. In cases where the supply of teachers fails to satisfy the existing demand, the most severe problem that arises is the increase in the number of students per teacher. Moreover, in cases where the supply is insufficient, the issue of making the entrance conditions for the teaching profession more flexible can also lead to a decrease in the quality of teachers (Eğitim-Bir-Sen, 2016). In cases where the supply of teachers is above the existing demand as in the case of our country, the issue of which criteria will be used in the selection of teachers is an important point on the agenda.

In Table C.2.1, an estimated calculation has been made which demonstrates the need for teachers in public schools in Turkey. Since no up to date data has been published by the Ministry of National Education related to teacher requirement, a calculation has been made of the teacher requirements in February 2016 (Eğitim-Bir-Sen 2016) by taking the number of teachers exceeding the fixed quota as fixed and considering the number of teachers appointed in the last two years, and also considering the teachers who leave the system due to such reasons as retirement, transfers to other institutions, dismissal etc. According to this, it can be seen that the net number of teachers required is 77 thousand, and the real demand is around 120 thousand taking into account the fact that teachers exceeding the fixed quota will not be relocating to places of need for such reasons as spouses etc. However, with the decision adopted by the Board of Education in 2017, the weekly course hours of some courses at the elementary and secondary education levels were increased and some were decreased. With this decision, since the weekly course hours of many courses changed, the number of teachers needed in courses with an increased number of weekly hours increased triggering a new demand for teachers exceeding the fixed quota in courses with decreased course hours. In addition to this, the decision to create intensive foreign language courses

Table C.2.1 Teacher need analysis

	Available number of teacher	Needs on the basis of institutions	Exceeding fixed quota	Net need	Retired	Resigned, transferred, dismissed etc.	Appointee
February 2016	825,869	131,369	40,943	90,426	-	-	30,805
March-December 2016	-	-	-	-	9,943	-	18,506
January-December 2017	-	-	-	-	10,000	-	21,492
General	868,269	117,509	-	76,566	19,943	37,000	70,803

Source: Compiled using data provided by MONE in February 2016, as well as data from the MONE Budget Presentation report and data obtained from the MONE website.

Note: Calculated taking into account that the number of teachers exceeding the fixed quota did not increase.

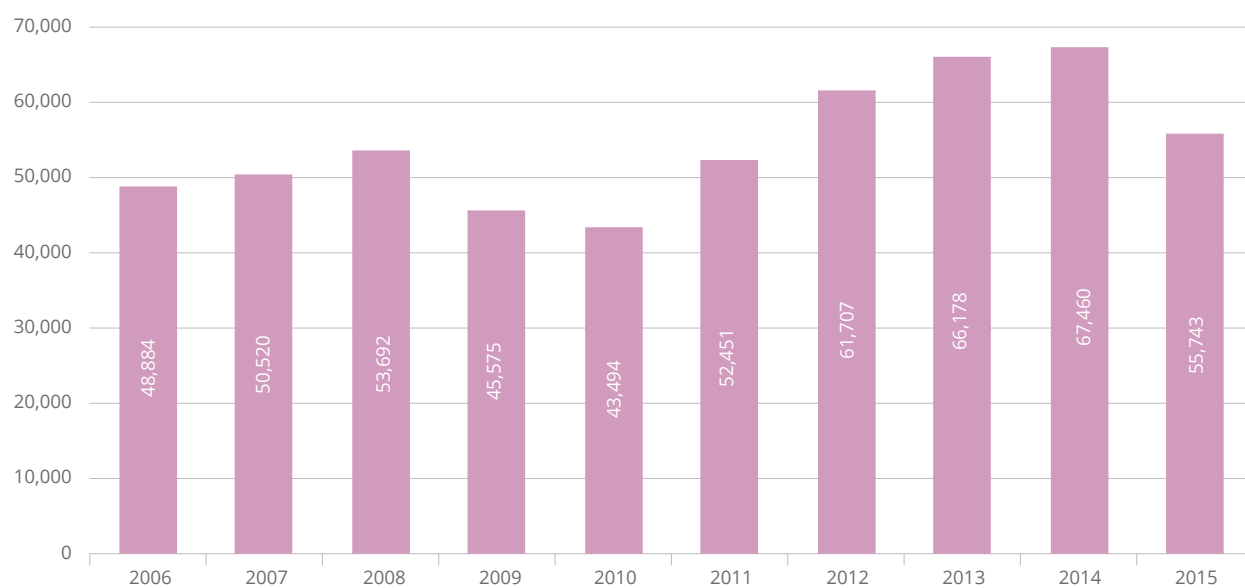
in fifth grade classrooms by allocating more than half of weekly class hours to foreign language learning in more than 600 schools in Turkey in the 2017-2018 educational year was implemented through a pilot program. With this decision, the demand for English course teachers could not be satisfied in these schools.

Moreover, other branch teachers in these schools had the status of exceeding the fixed quota (Eğitim-Bir-Sen, 2017). In the event that the pilot practice of making fifth grade classes more oriented towards foreign languages is turned into a general practice, the need for English course teachers will significantly increase on one hand while the number of teachers exceeding the fixed quota will also increase further on the other hand. In case preschool education is made mandatory, it is expected that the need for preschool teachers will increase further (Gür, Çelik

and Yurdakul, 2016). To put it more clearly, following the decision to change the weekly course hours and making fifth grade classes more foreign language oriented, it is expected that the number of teachers exceeding the fixed quota of 40 thousand in February 2016, will increase further. This demonstrates that the real demand for teachers is higher than 120 thousand.

Figure C.2.2 demonstrates the distribution of students who graduated from the faculty of education between 2006-2015. One of the main sources that determines the teacher supply in Turkey is the education faculties. Therefore, the number of students who graduate from the education faculties constitutes important data in terms of the teacher supply. It can be seen that the number of education faculty graduates has experienced a fluctuating trend between 2006-2015. Whereas the total number of

Figure C.2.2 Trends in the number of students who graduated from the faculty of education (2006-2015)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using data obtained from the OSYM and YOK website, was updated by the authors.

Figure C.2.3 Trends in the number of students who were newly enrolled in the faculty of education (2007-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using data obtained from the OSYM and YOK website, was updated by the authors.

students who graduated from the education faculties in the 2006-2007 educational term was 48,884, this number declined to 43 thousand in the 2010-2011 educational term with a decrease of around 5 thousand. The number of graduates, which demonstrated an increase trend after that date, increased to 67,460 in the 2014-2015 educational term and decreased again in the 2015-2016 educational term to 55,743.

Figure C.2.3 demonstrates the change in the number of students who were newly enrolled in the faculty of education between 2007-2016. The number of students who enrolled in the education faculties demonstrated a regular increase between 2007-2011 and in 2007 the number of new enrollments was around 45 thousand. The number of new enrollments in the education faculties since 2011 has decreased and the total number of students newly enrolled in education faculties in 2016 dropped to 5,191. The basic reason for this can be interpreted as the closure of secondary education programs in many departments in education faculties by the Board of Higher Education (BHE) in 2012.

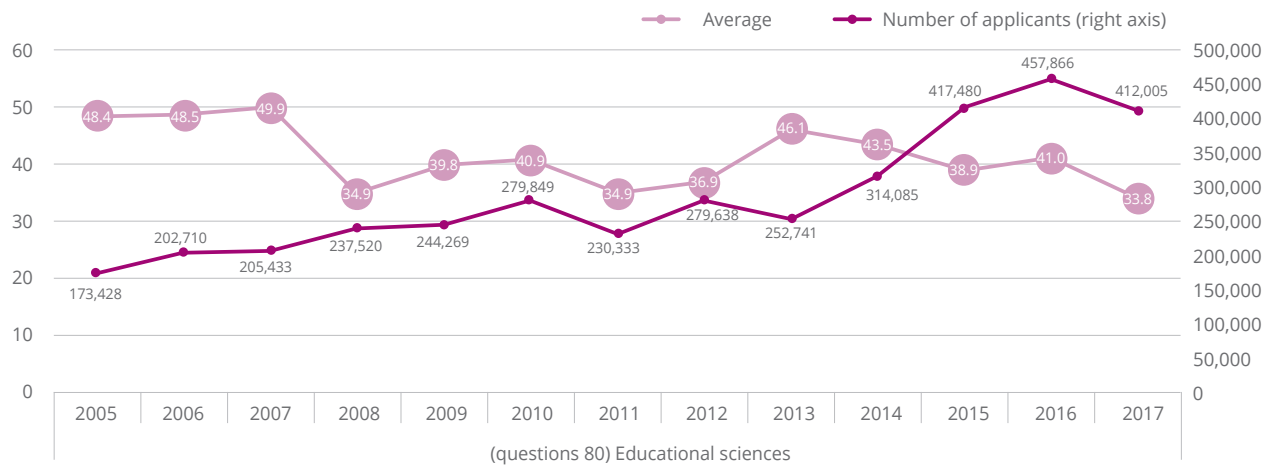
Whereas the number of students who graduated from the education faculties gives some indication of the teacher supply, it does not completely demonstrate the big picture. In particular the increase in the number of candidates who receive pedagogic formation training in recent years is one of the most important reasons for this. Table C.2.4 demonstrates quota allocated by the BHE to pedagogic formation programs A quota of around 170 thousand pedagogic formations has been allocated for universities between 2013-2015. After 2016, the authority

Table C.2.4 Quota numbers for pedagogic formation for the years (2013-2017)

	Number of applicants	Quota	Additional quota
2013	65,735	30,000	-
2014	45,893	40,000	-
2014	-	62,045	4,450
2015	-	41,490	3,390
2016	-	Sınırsız	-
2017	-	Sınırsız	-

Source: The table, prepared originally by the Outlook on Higher Education in Turkey 2017: Monitoring and Evaluation report, using data obtained from the OSYM and YOK website, was updated by the authors.

Figure C.2.5 Trends in the number of candidates who took the KPSS educational sciences test and their average net scores (2005-2017)



Source: The figure, prepared originally by the Outlook on Higher Education in Turkey 2017: Monitoring and Evaluation report, using data obtained from the OSYM and YOK website, was updated by the authors.

Note: The number of questions in educational sciences was reduced from 120 to 80 in KPSS after 2013 (inclusive). In order to make a comparison between the years, the average net scores in the years with 120 questions were recalculated over 80 questions.

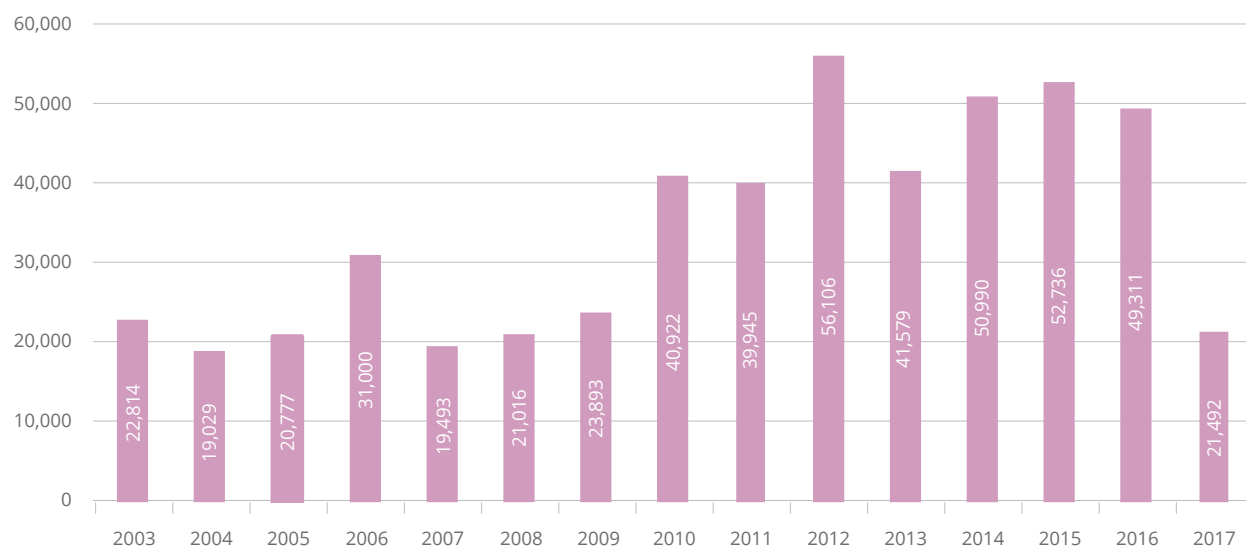
to determine the pedagogic formation quotas was transferred to universities and the universities changed quotas as desired. As a result of this regulation, now anyone who wants it can receive a pedagogic formation. There is no data on the number of people who received pedagogic formation following this decision (Gür et al. 2017).

It could be said that the main sources which determine the teacher supply in Turkey are the education faculties and for those who graduated from other faculties, the pedagogic formation education. The precondition to become a teacher in a public school for candidates who come from this background is to enter the KPSS exam and to obtain a sufficient score. Therefore, it can be said that the most important data in demonstrating the total teacher supply in public schools is the number of people

entering the educational sciences Public Staff Selection Exam (KPSS). Within this scope, Figure C.2.5 demonstrates the change in the number of candidates who entered the KPSS educational sciences test and the average net scores between 2005-2017.

As it can be seen from Figure C.2.5, the number of students who entered the KPSS educational sciences exam increased from 173,428 to 412,005 between 2005-2017. Since 2013, there has been a significant increase in the number of candidates who entered KPSS exam. The possible reason for this is the fact that people who graduated from various faculties, including the science and literature faculties, received pedagogic formation documents after the year 2013, and these people entered the KPSS exam.

Figure C.2.6 Trends in the number of teachers appointed (2003-2017)



Source: The figure, prepared originally by the Outlook on Higher Education in Turkey 2017: Monitoring and Evaluation report, using data provided by MONE in 2017, was updated by the authors.

Note: A total of 18.506 contract teachers were appointed in total, comprising 3.633 from those working in private courses and study centers in 2016.

Note: The number of teachers appointed to contract positions but transferred to permanent staff status (4/A) is 71.820, which is not included in this number.

Table C.2.7 The lowest KPSS scores, interview scores and the overall number of teachers appointed as contractors in Turkey on the basis of branch (2016-2017)

Field name	Lowest interview score	Lowest KPSS score	Number of assignments
Primary School Teaching	76.00	71.56743	8,312
English	68.00	67.23339	3,898
Culture of religion and knowledge of morality	74.00	69.82836	3,759
Primary education Mathematics	68.67	65.78918	2,930
Preschool	79.01	76.90487	2,566
Natural sciences	80.00	77.55431	1,755
Turkish	80.66	78.12854	1,777
Counseling	82.00	77.38297	1,258
Private education	74.00	67.67679	980
Physical education	78.00	74.27743	1,208
Mathematics	87.01	84.28359	1,703
Turkish language and literature	86.33	82.05431	1,572
İ.H.L. Vocational Courses	73.00	68.08105	754
Arabic	60.33	52.22622	291
Music	63.00	60.42402	557
Arts	74.33	69.45086	443
Physics	80.00	78.02196	809
Biology	83.00	78.11809	779
Information and communication technologies	86.33	82.42550	570
Chemistry	82.33	78.73174	694
Social sciences	84.34	80.57878	672
Technology and design	70.66	70.74165	236
History	85.67	81.19762	592
Geography	84.00	79.80888	473

Source: Compiled using data obtained from the MONE website.

Note: Private course and study teachers are included in the number of appointments, but not in the interview points.

When the change in the average net score of those who entered the education science exam of the KPSS between 2005-2017 is analyzed, the performances of candidates differ over years. The net scores of candidates ranged between 49.9 to 33.8 over 80 questions during these years. Since the exam questions in different years are not comparable with each other, no evaluation can be made of whether the reason for the decrease or increase of the average net scores is due to the performances of the candidates or the level of difficulty of the questions.

Figure C.2.6 demonstrates the number of teacher appointments by MONE from 2003 up to now. As it can be seen from the figure, around 20 thousand teachers were appointed annually on average between 2003 and 2009. The only exception between among these years is the year 2006 when 31 thousand teachers were appointed. In 2010, around 41 thousand teachers were appointed. Following 2010, with the effect of the 4+4+4 educational reform, the number of teachers appointed was around 50 thousand on average per year. 2017 marks the year with the lowest number of teacher recruitments in recent years with 21,492.

With the regulation that was brought with the Decree Law No. 668 dated 27 July 2016, it became possible to employ contract teachers in public schools. Within the scope of this new implementation, for appointing a candidate to a position, threefold of candidates are invited to take the oral exam, determined according to the KPSS scores. The oral exam score is the final determinant for appointments. Table C.2.7 gives the total number of contract teachers appointed in 2016 and 2017 as well as the lowest interview and KPSS points. According to this, more than 40 thousand contract teachers were appointed in both years. The branches with the highest number of appointment were primary school teachers (8,312), English (3,898), culture of religion and ethics (3,759) and elementary math (2,930). However, some differences appeared that arise from the teacher supply in the relevant area or from the distribution of the existing teachers. For example, the number of

Table C.2.8 The lowest interview points and scores overall in Turkey on the basis of branches of teachers appointed on a contract basis from those working in cram schools and study centers (2016 October)

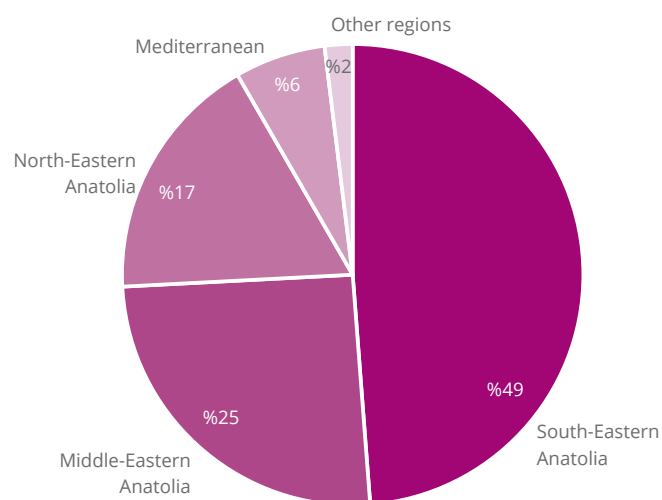
Field name	Lowest interview score	Number of assignments
Mathematics	70.0	950
Turkish language and literature	64.3	634
Physics	80.0	400
Biology	60.0	324
Chemistry	60.0	312
History	85.0	300
Geography	64.3	239
Social sciences	60.0	161
Natural sciences	69.3	111
Philosophy	90.7	100
Primary education Mathematics	65.7	20
Turkish	60.0	20
Primary School Teaching	70.7	10
Accounting and finance	80.0	9
English	73.0	7
Turkish language and literature	71.7	6
Other	-	30
Total	-	3,633

Source: Compiled using data obtained from the MONE website.

appointments remained at a lower level in the field of special education where the need is high yet the supply is not. In the field of homeroom teachers, despite the fact that the net requirement is not that high, a number higher than the expected number of teachers were appointed disadvantageous regions in particular.

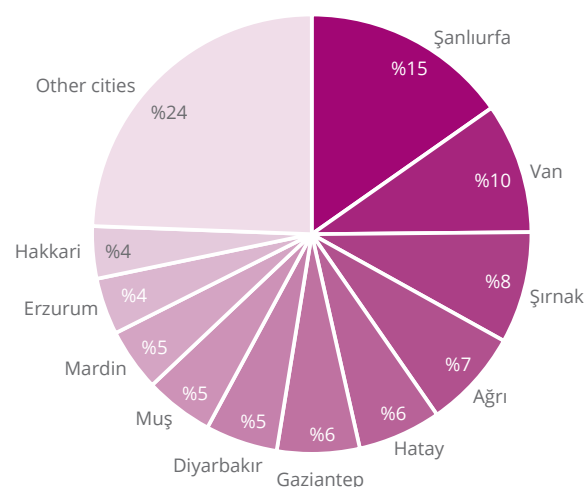
The lowest interview points and scores that occurred overall in Turkey on the basis of branches for teachers appointed on a contract basis from those working in cram schools and study centers for October 2016, are given in Table C.2.8. In addition to the contract teacher appointments that were made in connection with the KPSS and oral exam scores, 3,633 contract teachers were appointed through oral exams from among teachers who were working in cram schools and survey centers in 2016. Depending on

Figure C.2.9 Demonstrates the proportional distribution of contract teachers appointed by region (2017)



Source: Compiled using data obtained from the MONE website.

Figure C.2.10 Demonstrates the proportional distribution of contract teachers appointed by province (2017)



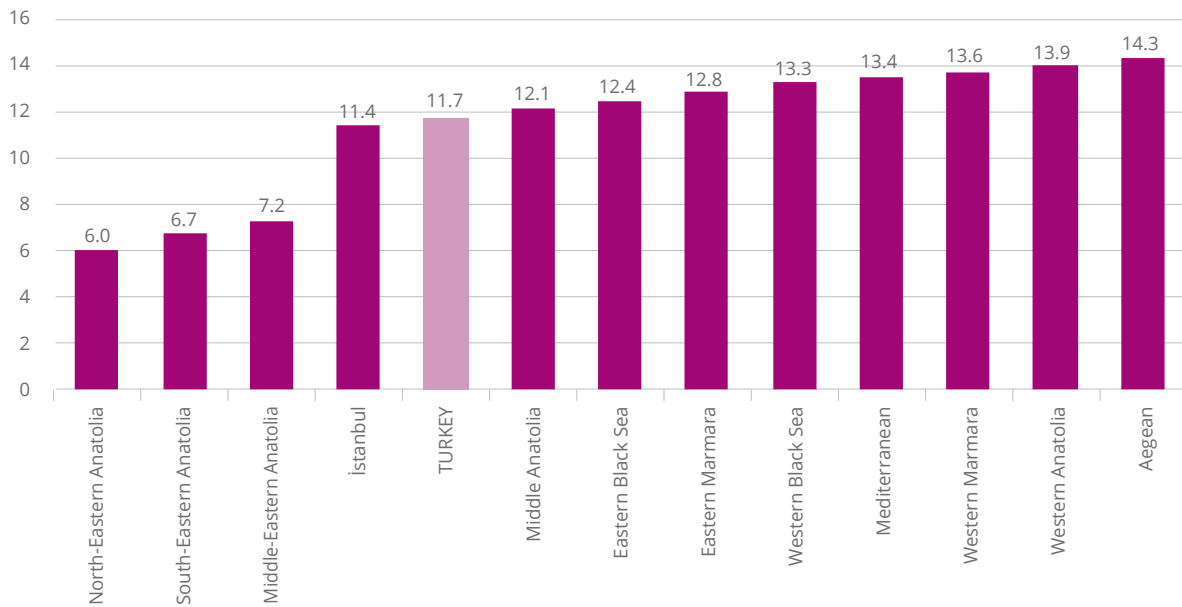
Source: Compiled using data obtained from the MONE website.

the general profile of teachers working in cram schools and study centers, it can be seen that the appointments take place more in branches towards secondary education institutions. Within this scope, branches in which the highest number of teachers were appointed include Math (950), Turkish Language and Literature (634), Physics (400), Biology (324), Chemistry (312) and History (300) Since the contract teacher appointments made from among those working in cram schools and study centers is planned as an ad hoc practice, it could be said that the appointments made within this scope took place in line with the profiles of the applicants rather than the teacher requirements.

Figure C.2.9 demonstrates the proportional distribution of contract teachers appointed in 2017 by region. Almost half (10,485) of the 21,492 contract teachers appointed

in 2017 were assigned to the South-Eastern Anatolian Region. The total number of teachers appointed to North-Eastern Anatolia and Central East Anatolia regions is quite high (9,218). In addition, 1,369 teachers were appointed to the Mediterranean region and 420 contract teachers were appointed throughout different regions. This data demonstrates that the teacher gap in South East and East Anatolia regions are being compensated for by contract teacher appointments. The practice of contract teachers was implemented in order to decrease the period in which the teachers remain in the place they are appointed to. Within this scope, teachers who were appointed on a contract basis could be transferred to permanent teaching positions after working in the institution they have worked in for four consecutive years and they must continue to work in the place they were appointed for two more years.

Figure C.2.11 Period of employment of teachers working in public schools by region (February 2016)



Source: The figure, prepared by Eğitim-Bir-Sen (2016) using data provided by MONE in February 2016.

Figure C.2.10 demonstrates the proportional distribution of contract teachers appointed in 2017 by province. It can be seen that around 75% of the teachers appointed under the scope of the practice were appointed to 11 provinces. Of the contract teachers appointed in 2017, 15% were appointed to Şanlıurfa, 10% to Van, 8% to Şırnak and 7% to Ağrı. It can be seen that all of the provinces where the highest number of contract teachers were appointed are among the provinces where the number of students per teacher is the highest overall in Turkey (see Part D).

As it was indicated before, one of the most important reasons for the demand for teachers is retirement of former teachers. Within this scope, it is important to analyze the employment periods of existing teachers. Figure C.2.11 demonstrates the employment period averages of teachers working in public schools in Turkey by region in 2016. As it can be seen in the Figure, the average employment period of all teachers in Turkey is 11.7 years as of 2016. Under the scope of this data, it could be said that teachers in Turkey generally have a young profile.

Besides, taking into account the fact that there is a need to work for 25-30 years before a teacher can retire, it can be said that the demand for teachers in Turkey that will occur in connection with retirement will not be at a very high level at least in the short term.

Therefore, in teacher planning, it is highly important to take into account the retirement status of existing teachers on the basis of region. When the data related to the average employment periods of teachers given in C.2.11 is analyzed, it can be seen that there are important differences on a regional basis. The average employment period increases up to 14.3 years from west to east, and decreases to even 6 years in eastern regions. Regions where the average teaching experience is the highest are in the Aegean (14.3), Western Anatolia (13.9) and Western Marmara (13.6), and regions where this is lowest are North Eastern Anatolia (6), South-Eastern Anatolia (6.7) and Central East Anatolia (7.2). The employment period of teachers in these three regions where contract teachers are appointed the most is significantly lower compared to other regions.

Figure C.3.1 demonstrates the salaries of teachers who are starting their careers in different countries compared to their salaries after 15 years of experience in USD under the scope of purchasing power parity. As in the case in all professions, in the teaching profession, the economic earning is accepted as an important indicator in terms of the reputation of the profession and interest in it (social status). Economic earning also plays an important role in terms of directing more qualified people to the profession and increasing the motivation of those who work in these professions.

As it can be seen in Figure C.3.1, Turkey is under OECD average in terms of the annual earnings of teachers. The average annual earnings of teachers' in terms of starting salaries in OECD countries is around 32,288 USD when

calculated taking into account purchasing power parity. In Turkey, this amount is 5,000\$ under the OECD average and is 27,285\$. Whereas Luxembourg is the country with the highest teacher salaries among OECD countries with an annual earning of 75,657\$, other countries with high teacher salaries include Denmark (47,048\$), Norway (43,998\$) and the USA (43,521\$) On the other hand, Lithuania (8,555\$), Slovakia (12,742\$), Hungary (13,724\$), Poland (15,468\$) and Czech Republic (17,906\$) are among the countries with the lowest teacher salaries. Another indicator in addition to teachers starting salaries is the extent to which these salaries are increased over time. According to the data presented in Figure C.3.1, the earning of a teacher with experience of around 15 years reached 44,705\$, an increase of 12,500\$ above the OECD Average starting level. In Turkey, the annual earning of a

Figure C.3.1 Salaries of teachers who newly started teaching compared to those who have 15 years of experience in OECD countries (\$) (2015)



Source: OECD (2017)
Note: Purchasing Power Parity is used

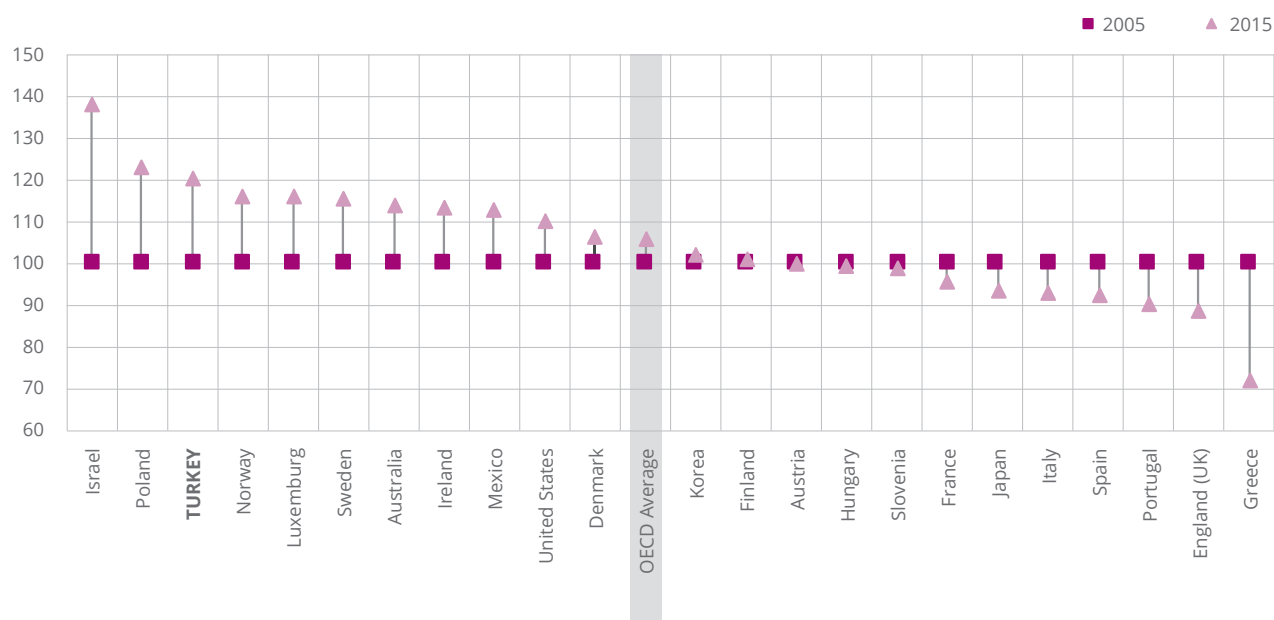
teacher with 15 years experience increases to 30,129\$ which is around 3,000\$ more than the starting level.

From the point of view of the increase of teacher salaries according to experience, Turkey is amongst the lowest levels among all OECD countries. As it can be seen in Figure C.3.1, teacher salaries demonstrate a significant increase with experience in many OECD countries. For example, in some countries such as the Netherlands, Korea, UK, Scotland, Slovenia, Columbia and Poland, there was an increase of more than 50% over 15 years in the teacher salaries. In Turkey, this increase is only around 11%.

It can be seen that the teacher salaries in Turkey are beyond the OECD average in terms of both the starting salaries and the increase parallel to experience. However,

in addition to this, it is important to demonstrate the change experienced in the teacher salaries over the years in order to understand the change experienced from past to present and to make estimations towards the future. Figure C.3.2 demonstrates the change in the teacher salaries in different years between 2005 and 2015. As it can be seen, in this 10-year period, Turkey was the third country with the highest increase in teacher salaries following Israel and Poland. The calculation made according to 2015 fixed prices demonstrates that teacher salaries in Turkey demonstrated a real increase of 20% in a period of 10 years. In case this trend continues, it can be said that in the coming years, Turkey will come closer to the OECD average in terms of teacher salaries in coming years.

Figure C.3.2 Trend in the teacher salaries in different countries (lower-secondary education (2005-2015))



Source: OECD (2017)

Note: Calculated with the change index from 2005 (2005 = 100); 2015 fixed prices; over the salaries of teachers with 15 year experience.

The most critical element of the increasing success in an education system is quality teachers. An education system has quality only with quality teachers (UNESCO, 2015). This situation highlights factors such as the quality of teachers, the training process before the profession and the characteristics of those starting the profession. Moreover, factors such as the salary received by teachers has become more significant in this process (Yurdakul, Gür, Çelik and Kurt, 2016). All countries make special investments in their teachers and develop policies in order to improve their education systems (OECD, 2005). Turkey has engaged in intense efforts to increase the number of teachers in order to improve their education system. The total number of teachers, which was around 445 thousand in 1997, increased to 500 thousand in 2002 and exceeded 1 million in 2017 (see. Figure C.1.1) It was expressed that the increase in the number of teachers is one of the factors in the development of educational success in Turkey in PISA 2009 (World Bank, 2013).

Around 59% of teachers in Turkey work in elementary education institutions, 34% in secondary education institutions and around 8% in preschool educational institutions (see. Figure C.1.1) The number of preschool teachers rapidly increased after 2009. The number of preschool teachers, which was 28,392 in 2008, increased to 42,716 in the next year. Because, in 2009, MONE decided to disseminate preschool education with a new circular. In 2009, one third of teacher appointment quotas were allocated to preschool teachers. For example, out of a 15,800 quota given for 2009-2010 period teacher appointment, 5,356 were allocated to preschool teachers (MONE, 2009).

The number of teachers working in private elementary and secondary schools also had a very rapid increase over time. Whereas the number of teachers in 1990 was 2,390 in elementary education and 7,027 in secondary education, this number increased in 2017 to 52,871 in elementary education and 54,369 in secondary education (See. Figure C.1.2). A rapid increase has been experienced after 2012 in the number of teachers in private schools. The reason for this is the increase in the number of private schools and teachers. As a result of the transformation process that started in 2013, the basic schools were turned into private schools and as a result of this there was a boost in the number of private education institutions. In addition to this, support for private school students, which was launched first for private vocational and technical secondary education institutions in 2012, was disseminated for all private schools, which increased the preference to attend private schools in a rapid manner (Eğitim-Bir-Sen, 2016). As a matter of fact, a target was set to increase the rate of teachers enrolled in private education in the development plans and government programs (64th Government Program, 2015; Ministry of Development, 2013).

When the gender distribution of teachers is analyzed, it can be seen that the rate of female teachers has shown an overall increase trend in the last 20 years. Whereas the rate of female teachers was 44% in 1997, it increased to 58% in 2016. The rate of female teachers, which was 43% in 2002 in both elementary education and secondary education levels, increased to 59% at the elementary school level and to 49% at the secondary education level in 2016 (see. Figure C.1.4). Whereas almost all teachers before 2000 were female at the preschool level, the rate of female teachers was 95%

after 2016. In private education institutions, the gender distribution of teachers demonstrates a trend that is opposite the change experienced in the total rate of female teachers. Whereas the rates of female teachers in 1990 was 89% in private elementary schools and 62% in secondary elementary schools, this rate decreased to 73% in elementary education and 58% in secondary education in 2016 (see Figure C.1.5)

Despite the fact that the rate of female teachers decreases in private schools, the rate of female teachers in public schools is higher. The most important reason for the rate of female teachers both in private and public schools to decrease in the 2000s was the ban brought to working with headscarves after the February 28 decisions. With this ban, many female teachers left the profession (Eğitim-Bir-Sen, 2016). In the following years, the rate of female teachers increased as a result of women attending higher education institutions and in particular entering education faculties, and also abolishment of the headscarf ban. The rate of women among students who being educated in the education faculties is 64.5% (see Figure C.1.7) This data demonstrates that it is possible that the rate of female teachers will increase further in coming years. An important difference is seen when the distribution of female teachers working in public and private schools by region is analyzed. Whereas the rate of female teachers in the South East, Central Anatolia, Central East Anatolia, Eastern Black Sea and Western Black Sea regions is under 50%, it was above 60% in Istanbul and Western Anatolia (see Figure C.1.6)

Despite the general increase experienced in the last twenty years, Turkey remains under the OECD average in all levels in terms of the rate of female teachers (see. Figure C.1.8). This demonstrates that in many countries, the teaching profession is preferred more by women. The basic reason for women to prefer the teaching profession more could be tied to cultural prejudices that teaching is a profession that is more suitable for women. Besides, despite the fact that the incomes of male and female teachers are close to each other in many countries, men could earner a higher incomes compared to other professions that require higher education (OECD, 2017).

Despite the increase in the number of teachers in recent years, there is still an important need for teachers. According to the estimated calculation, it can be seen that the net demand for teachers is around 80 thousand. Taking into account the fact that teachers exceeding the fixed quota will not be going to the places where there is a demand due to such reasons as spouses etc., the real need for teaches can be estimated at around 120 thousand. With the decision taken by the Board of Education and Discipline to change the weekly hours of many courses in elementary education and secondary education and to make the foreign language component of fifth grade classes more intensive, it is estimated that the need for teachers in branches such as English will increase and the number of teachers exceeding the fixed quota will grow further in some branches. That means, the real need for teachers in public schools in Turkey is much more than 120 thousand (See Table C.2.1)

In recent years, more than 60 thousand, and in the 2015-2016 educational term in specific, more than 56 thousand candidate teachers graduated education faculties (see Figure C.2.2) In addition to this, 70 thousand people were registered in the education faculty in 2011, and 50 thousand were registered in 2016. As a result of the intense demand that came from the academicians and students from the faculties of science and literature in 2013, following the negotiations held with

BHE in the then the National Education Minister Nabi Avci, it was resolved to admit students with central placement into pedagogic formation programs (Gür, Çelik, Coşkun and Görmez, 2014) Whereas it was expected that a balance would occur between the supply and demand with the decrease in the number of students who entered and graduated from education faculties, a significant change has occurred in the teacher supply demand balance with the decision of issuing pedagogic formation certificates. The pedagogical formation certificate issuance was carried out centrally by BHE between 2013-2015, and was issued to a limited number of students. However, after 2016, the limitation on the issuance of pedagogic formation certificates was abolished and all universities started to issue this document at will. There is no data on how many people currently hold the pedagogical formation certificate.

In 2017, 410 thousand people entered the KPSS educational sciences exam and a total of 21 thousand teachers were appointed. According to the 2015-2016 educational year data, 275 thousand people have been studying in education faculties. When a calculation is made, taking into account the fact that there are around 300 thousand students in the education faculties, 400 candidates entered the KPSS but were not appointed, and the number of candidates in various higher education programs to apply to pedagogic formation programs is around 700 thousand, it is possible that the number of candidates to apply to the KPSS educational sciences exam could exceed 1 million in the coming years. The fact that the real need for teachers is minimum 120 thousand and 21 thousand teachers were appointed in 2017, demonstrates that we came to the end of the appointment of a high numbers of teachers. This situation demonstrates that the problem of “unassigned teachers” will remain in MONE and the government’s agenda of in coming years (Gür et al. 2017).

With the Decree Law No. 668 dated 27 July 2016, the contract teacher recruitment program began to be implemented again. It was indicated in the Decree Law that contract teachers to be appointed may not be appointed to any other place for 4 years, and that in case of change of place for family reunification that they will be appointed to the teacher positions at the place they work at the end of the 4th year upon their request, but that they must remain working in the place they were assigned for a period of two more years if they are appointed to permanent positions (Decree Law No. 688, 2016).

Contract teacher practices have been implemented in the past years and subsequently abolished due to the many problems it caused. This lead to discrimination between teachers working under contract and their other colleagues, which is not present in other professional groups. In addition to this, it was indicated that contract teachers may not come together for family reunification even in cases where their spouse is not a teacher, so they are forced to choose between either “spouse or work”. Apparently this contradicts the Constitutional provisions which are based on family unification. Under the scope of contract teacher practices, a total of more than 40 thousand teachers were employed in 2016 and 2017. More than 90% of the 21,492 contract teachers who were appointed in 2017 were appointed to East Anatolia and South-Eastern Anatolia regions (see. Figure C.2.9 and Figure C.2.10). In general, it can be seen that contract teacher appointments are made to provinces where the need for teachers is high. However, in place of the contract teacher

practice, which creates discrimination between teachers and causes problems in the employment rights of teachers, mechanisms should be developed that will encourage teachers to work in more disadvantaged regions (Eğitim-Bir-Sen, 2016)

With the implementation of contract employment for teachers, the oral exam was included for the first time in the process of teacher employment in Turkey. The oral exam has been discussed in the public from the first day the practice was launched. In particular, such issues as many oral exam commissions being present, the competencies of those in the exam commission, questions asked in the exams etc. frequently come to the agenda. There is a general opinion that thousands of candidates being subjected to oral exams within a short period of time by several commissions does not serve effectively in the selection of qualified teachers and obstructs equality in access (Eğitim-Bir-Sen, 2016).

It can be seen that the teachers in Turkey have a young profile. According to 2016 data, the average employment period of teachers working in public schools is around 12 years. However, there are important regional differences between teachers in terms of their average employment periods. For example, whereas the average service period increases up to around 14 years in the Aegean region, this decreases to 6-7 years in East Anatolia and South-Eastern Anatolia regions (see Figure C.2.11) It is accepted that one of the most important elements that determines teacher quality is experience (Clotfelter, Ladd and Vigdor, 2005; Henry, Fortner and Bastian, 2012). Experienced teachers are an important element in increasing success in education and abolishing the disadvantage among children in disadvantaged regions.

The starting salary of teachers in Turkey is below the OECD average. According to the calculations made taking into account the purchasing power parity, the annual average earnings of a teacher at the entry level in OECD countries is 32 thousand, and the annual earnings of an entry level teacher in Turkey is around 27 thousand. The average annual earning of a teacher who has 15 years of experience in OECD countries is 12,500 above the starting level, reaching 45 thousand USD. The annual earning of a teacher with 15 years of experience in Turkey increases by around 3 thousand USD, reaching 30 thousand USD. From the point of view of increase of teacher salaries according to experience, Turkey is at the lowest level among all OECD countries. Results of a study conducted by Yurdakul et al (2016) on the status of the teaching profession support the data presented here. According to the results of this research, a significant portion of the teachers in Turkey are not satisfied with the salaries they receive. Moreover, the level of satisfaction increases with the increase of seniority in the profession.

- Very high numbers of new teachers have been recruited in the public sector in Turkey particularly after 2010. However, due to the increase in the number of students, these appointments could not ensure complete abolishment of the demand for teachers. In 2017, the number of teacher appointments continued to remain relatively low. Taking into account the gap for teachers, there is a need to maintain the policies for recruiting a high number of teachers (around 50 thousand) to overcome this gap.
- Another problem in addition to the need for teachers relates to the distribution of teachers. Whereas there are teachers exceeding the fixed quota in some institutions, some institutions need teachers in the same areas. Within this scope, policies should be developed to protect the preferences and rights of teachers by utilizing teachers that exceed the fixed quota in the institutions where there is a need. Within this scope, encouraging practices should be developed that promote teachers to permanent staff positions in institutions/ regions where there is excess, to shift them to institutions/regions where there is a need.
- The regional distribution of teachers appears as another challenging issue. The need for teachers intensifies in certain regions. The practice of contract teaching has been implemented in order to generate a solution to this problem. However, taking into account the problems in contract teaching, it can be said that practices should be developed that will encourage working in disadvantageous regions instead of recruiting contract teachers. Moreover, taking into account the concerns and criticisms of the public, the practice of verbal interview exams in teacher recruitment should be put to an end.
- Turkey is one of the OECD countries that has increased the teaching salaries the most in the last ten years. However, the annual earning of an entry level teacher in Turkey is nonetheless around 5,000 USD lower than the OECD average. Moreover, this difference increases with the increase in teaching experience. Whereas the annual earning of a teacher with 15 years of experience increases to 45,000 USD on average in OECD countries, in turkey this increase would be the equivalent to just 30,000 USD. Therefore the teacher salaries should be improved and elevated to the OECD level.

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CHAPTER



EDUCATION-TEACHING ENVIRONMENT

INDICATOR D1	Number of Schools, Divisions and Classrooms
INDICATOR D2	Average Class Size
INDICATOR D3	Student-Teacher Ratio
INDICATOR D4	Bussed School
CHAPTER D	Highlights
CHAPTER D	Recommendations

Significant developments have taken place in Turkey in recent years in terms of access and participation in education, and with the effect of mandatory education practices, the schooling rate and student numbers have significantly increased across all levels. Although the increase in the number of students and schooling rate is a positive development, it is inevitable that students will experience severe problems in the quality of education in the event that the environment in which they receive their education does not meet requirements.

Education environments include various elements from the physical environments where education-teaching activities are carried out, to the materials used in the classroom-teaching activities (resources) to the staff (teacher, administrator, assistant staff etc.) (Eğitim-Bir-Sen 2016). For this reason, it is necessary to study the education-teaching environment, which is one of the basic elements that affect the quality of education, in a separate section.

In this section, indicators related to education-teaching environments of different education levels are studied and developments related to education environments are analyzed under the light of certain indicators related to the number of classrooms, classroom populations, student -teacher rates and bussed school rates.

Under this indicator, the change that occurred in the number of schools, divisions and classrooms over the year is examined. First the change in the number of public and private schools of different types and at different education levels were analyzed for the period of the last ten-year, and a detailed analysis was made on the number of classrooms and divisions by level. Subsequently, the status of the number of classrooms and divisions in general high schools and vocational high schools at the secondary education level was examined and finally the status of the number of new classrooms constructed after 2006 in different stages was analyzed in detail.

The change in the number of public and private schools by level between 2006-2016 is given in Table D.1.1. According to this, the total number of private and public schools, which was 63,265 in 2006 in all levels, increased to 82 thousand 899 with an increase of around 31% in 2016. When considered from the point of view of levels, the highest increase in the number of schools was at the preschool and general high school level. The number of schools, which was 20,675 in 2006 at the preschool level, increased to 28 thousand 891 with an increase of around

40% in 2016, and the number of schools which was 3,690 in 2006 in general high schools increased to 5,152 with an increase of around 40%. When the change in the number of vocational high schools over the years is examined, it can be seen that there has been an increase of around 28% in the last ten years.

The number of vocational high schools, which was 4,244 in 2006 in total including private and public schools, increased to 5,444 in 2016. The increase in the total number of schools in elementary education (primary school + middle school) between 2006 and 2016 was 25%, this was at a relatively lower level compared to other levels.

The most striking issue in the total number of schools in elementary education was the decrease between 2006 and 2012, when the 4+4+4 practice began. Whereas the total number of schools in elementary education was 34,656 in 2006, it had a decreasing trend in the following years and dropped to 32,108 in 2011. It is believed that the reason for the decrease in the number of schools was the closure of schools in places where the number of students is low and transportation of these students to

Table D.1.1 Number of schools by level (2006-2016)

Year	Preschool	Primary education		Primary school		Secondary school		General high school		Vocational high school		All levels total
	Total	Total	Private	Total	Private	Total	Private	Total	Private	Total	Private	
2006	20,675	34,656	757					3,690	696	4,244	21	63,265
2007	22,506	34,093	866					3,830	711	4,450	21	64,879
2008	23,653	33,769	907					4,053	783	4,622	27	66,097
2009	26,681	33,310	879					4,067	709	4,846	22	68,904
2010	27,606	32,797	898					4,102	774	5,179	24	69,684
2011	28,625	32,108	931					4,171	840	5,501	45	70,405
2012	27,197	46,156	1,896	29,169	992	16,987	904	4,214	907	6,204	126	83,771
2013	26,698	45,551	2,043	28,532	1,071	17,019	972	3,744	1,007	7,211	426	83,204
2014	26,972	44,513	2,316	27,544	1,205	16,969	1,111	3,955	1,174	5,106	429	80,546
2015	27,793	43,865	2,944	26,522	1,389	17,343	1,555	5,311	2,504	5,239	419	82,208
2016	28,891	43,412	2,688	25,523	1,274	17,889	1,414	5,152	2,208	5,444	368	82,899

Source: The figure, prepared originally by Eğitim-Bir-Sen (2016) using statistics published by MONE in various years.

Note: No separation was made between public-private since healthy data could not be provided in the past years in relation to the number of private schools at the preschool level.

Table D.1.2 Number of schools by school type (2010-2016)

Year	İmam Hatip middle school	İmam Hatip middle school within İmam Hatip high school	İmam Hatip high school	Science high school	Social science high school
2010			493	115	27
2011			537	141	32
2012	1,099	369	708	144	32
2013	1,361	415	854	150	32
2014	1,597	378	1,017	232	88
2015	1,961	339	1,149	261	92
2016	2,777	410	1,408	294	93

Source: Compiled using statistics published by MONE in various years.

Note: The number of İmam Hatip high schools within the body of İmam Hatip high schools is shown in the number of İmam Hatip middle schools.

more central schools under the scope of transportation to schools. With regulation No. 6287, which is known as 4+4+4 in 2012, elementary education was restructured as primary school and middle school. With the separation of elementary schools as primary school and middle school, the number of schools increased to 46,156. The number of schools at the primary school and middle school level decreased to 43,412 in 2016. The possible reason for the decrease in the number of schools, which is 3 thousand, at the elementary education level in four years, is the closure of the schools in the rural areas where the number of students is low and transportation of these students to more central schools with transportation included as part of the education system occurred.

Another noteworthy issue in Table D.1.1 is the increase observed in the number of private education institutions in all levels. Whereas the number of private education institutions in 2006 was 1,474 in total, of which 757 are elementary education, 696 are general high schools and 21 are vocational high school, this number reached 5,264 in 2016, of which 2,688 are elementary schools, 2,208 general high schools and 368 vocational high schools.

It is also striking that the number of private education institutions in all levels increased further after 2014. There are some factors that contributed to this increase. One of these is the private school incentive provided to private school students after 2014-2015, and the other is the transition of private courses into basic high schools after 2014.

Table D.1.2 shows the number of İmam Hatip middle school, İmam Hatip high schools, science high school and social sciences high schools between 2010 and 2016. According to this, the number of İmam Hatip middle schools, which started education again with a total of 1,099 schools in 2012, of which 369 are under the umbrella of İmam Hatip high schools and 730 are independent, increased to, 2,777 of which 410 are under the umbrella of İmam Hatip high schools and 2,367 are independent. The number of İmam Hatip high schools, which was 493 in 2010, reached 1,408 in 2016. One of the basic reasons for this significant increase observed in İmam Hatip middle schools and İmam Hatip high schools is the abolishment of the coefficient practice in transition to higher education.

In Table D.1.2, it can be seen that the number of science and social sciences high schools significantly increased in the last ten year period. The number of science high schools, which was 110 in 2010, increased to 294 in 2016 and the number of social science high schools, which was 27, increased to 93. The increase in the number of science and social sciences high schools relates to the transformation of general high schools into Anatolian high schools in 2014, and following the closure of Anatolian teacher high schools, the transformation of most of these high schools into science or social sciences high schools (MONE, 2013). As a result of this decision, the number of science high schools, which was 150 in 2013, increased to 232 in 2014, and the number of social sciences high schools, which was 32, increased to 88.

Table D.1.3 Number of classrooms and divisions by level (2006-2016)

Year	Preschool		Primary education				Secondary education				All levels total	
	Total		Total		Private		Total		Private		Classroom	Division
	Classroom	Division	Classroom	Division	Classroom	Division	Classroom	Division	Classroom	Division		
2006	33,213	36,654	307,511	387,351	14,739	11,797	98,748	105,697	7,796	6,184	439,472	529,702
2007	36,236	40,857	315,887	392,521	16,808	12,980	100,853	105,606	8,708	6,510	452,976	538,984
2008	39,481	45,030	320,393	408,221	14,973	13,488	109,042	123,930	9,245	7,041	468,916	577,181
2009	45,703	53,235	332,902	416,930	17,952	14,160	110,310	139,420	8,271	7,399	488,915	609,585
2010	46,336	57,707	339,653	418,334	18,460	14,346	117,760	146,814	9,404	7,973	503,749	622,855
2011	48,802	61,937	344,710	422,751	19,450	15,188	121,914	148,703	10,119	8,330	515,426	633,391
2012	49,372	61,920	359,504	444,106	22,548	17,153	129,566	170,184	11,133	9,220	538,442	676,210
2013	50,466	63,273	371,856	447,074	26,031	19,463	140,560	177,774	16,047	12,554	562,882	688,121
2014	52,788	67,387	385,453	456,671	28,165	22,477	151,661	200,339	19,345	13,825	589,902	724,397
2015	58,265	71,003	411,033	459,695	40,336	29,147	182,530	214,871	41,727	29,348	651,828	745,569
2016	70,104	75,942	422,874	458,901	38,896	27,143	189,783	230,276	37,353	27,152	682,761	765,119

Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by MONE in various years and updated by the authors.

Note: Since data related to the number of classrooms only began to be shared after 2006, developments are examined after this year. No separation was made between public-private since healthy data could not be provided over the past years in relation to the number of private schools at the preschool level.

Changes between 2006 and 2016 in the number of classrooms and divisions by level are given in Table D.1.3. According to this, the total number of classrooms increased from 439,472 to 682,761 and the number of divisions from 529,702 to 765,119 from 2006 to 2016. That is, the total number of classrooms in Turkey in the last ten years increased by 55% and the number of divisions increased by 44%. The increase in the number of students in all levels in the same period was around 16% (See Indicator A.2). This data demonstrates that the number of students per classroom and division and the number of schools providing double-shift education decreased.

When the numbers of classrooms and divisions by level are examined over the years between 2006-2016, it can be seen that the greatest proportional increase was at the preschool and secondary education level on the basis of division. As a result of the fact that increasing the rates of participation in preschool education was set as a basic policy target, the number of classrooms, which stood at 33,213 in 2006, increased to 70,104 in 2016. The number of classrooms in secondary education increased from 98,748 to 189,783 between 2006-2016. The basic reason for the rapid increase in the number of classrooms in secondary education, is the inclusion of secondary education under the scope of mandatory education after 2012.

Table D.1.4 provides the number of classrooms and divisions in general high schools and vocational high schools in the period between 2006 and 2016. According to this, a significant increase has been observed in the number of classrooms and divisions between 2008 and 2016 in the two types of high schools. The reason for this is the increase of secondary education from 3 years to 4 years and the inclusion of high schools under the scope of mandatory education. When considered from the point of view of different types of high schools, the most striking issue is the rapid increase in the number of classrooms and divisions in vocational high schools compared to general high schools after 2011. Whereas the total number of classrooms in general high schools was 69,882 in 2011, this increased to 88,885 in 2016. In the same period, the number of classrooms in vocational high schools increased from 52,032 to 100,898. The reasons for the rapid increase in the number of classrooms and divisions in vocational high schools are the transformation of certain general high schools into vocational high schools within the scope of school transformations, the adoption of the practice of increasing the participation rates in vocational education through policy, and the increase in the number of private vocational high schools. It is considered that the increase in the number of private vocational high schools was significantly affected by the financial support provided

Table D.1.4 Number of classrooms and divisions by school type in secondary education (2006-2016)

Year	General high school				Vocational high school			
	Total		Private		Total		Private	
	Classroom	Division	Classroom	Division	Classroom	Division	Classroom	Division
2006	58,388	62,664	7,708	6,112	40,360	43,033	88	72
2007	60,880	62,380	8,533	6,434	39,973	43,226	175	76
2008	65,859	69,959	9,064	6,946	43,183	53,971	181	95
2009	65,314	75,180	8,122	7,285	44,996	64,240	149	114
2010	68,964	77,966	9,235	7,845	48,796	68,848	169	128
2011	69,882	77,608	9,715	8,076	52,032	71,095	404	254
2012	70,107	85,533	10,030	8,317	59,459	84,651	1,103	903
2013	64,499	84,803	11,196	9,386	76,061	92,971	4,851	3,168
2014	67,826	80,665	13,470	10,635	83,835	119,674	5,875	3,190
2015	90,806	90,749	34,401	26,397	91,724	124,122	7,326	2,951
2016	88,885	93,433	30,476	24,417	100,898	134,108	6,877	2,735

Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by MONE in various years was updated by the authors.

to students studying in private vocational high schools in the organized industrial zones that came into force in the 2012-2013 education and teaching term.

Table D.1.5 provides the number of classrooms newly constructed in the public by level and year. According to this, a total of 197,567 classrooms were constructed

between 2006-2016. 113,056 of the classrooms constructed were for elementary schools, and 36,398 for secondary education institutions. In particular, it is striking that there was a significant increase in the number of classrooms newly constructed at the secondary education level after 2012 when secondary education was taken under mandatory coverage.

Table D.1.5 Numbers of newly constructed classrooms (2006-2016)

Year	Total	Preschool/ kindergarten	Primary education	Secondary education (vocational and technical)	Non-formal education	Support for 100% education
2006	28,243	748	19,301	1,336	114	6,744
2007	15,728	425	10,721	928	124	3,530
2008	16,790	505	14,169	716	42	1,358
2009	9,844	1,304	6,148	1,720	48	624
2010	17,317	1,500	10,098	2,725	27	2,967
2011	9,802	1,627	3,347	1,763	54	3,011
2012	18,706	8,024	2,231	4,300	72	4,079
⁽¹⁾ 2013	17,266		9,826	3,849	125	3,466
⁽¹⁾ 2014	28,748		18,857	6,812	68	3,011
⁽¹⁾ 2015	15,145		9,158	4,468	1	1,518
⁽¹⁾ 2016	19,978		9,200	7,781	12	2,985
Total	197,567	14,133	113,056	36,398	687	33,293

Source: MONE (2017)

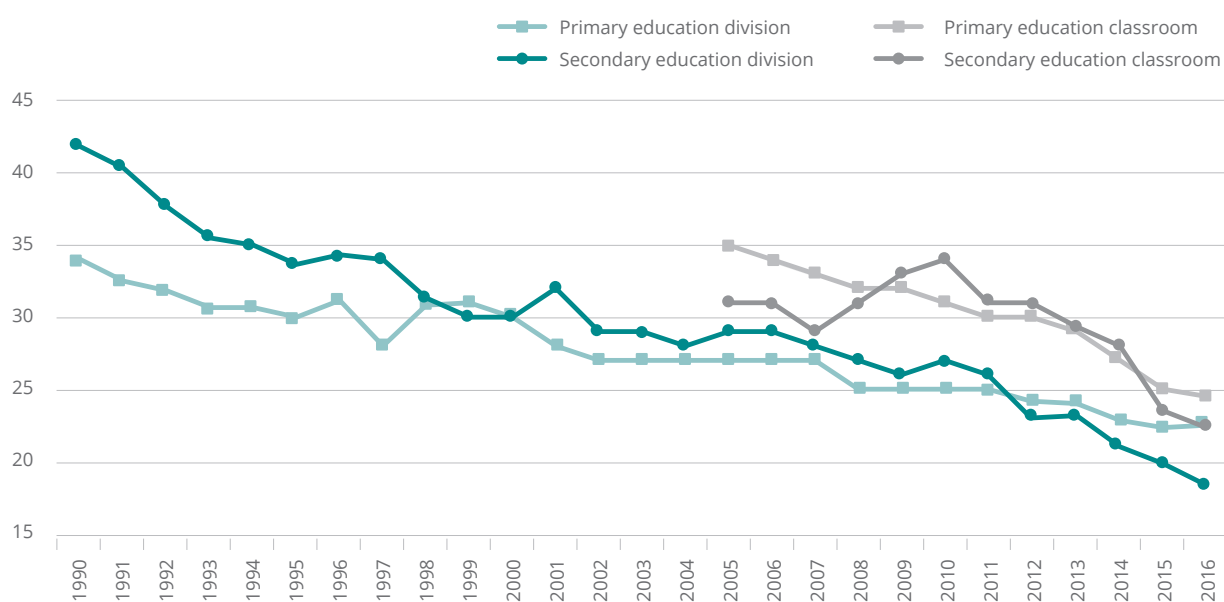
Note: Classrooms constructed by donors such as the World Bank, the European Union Grant, National Lottery, EFKAP, TELEKOM and TOKI resources are not included.

(1) The Kindergarten/ Preschool classrooms for these years are included in elementary education.

In this indicator, the change of the average class size by educational level under the scope of mandatory education over the years, regions and provinces are studied. Since the change in the number of average students by division, the number of classrooms and divisions are considered together, a standard dataset could not be obtained. In this indicator, particularly the change in the number of students per classroom and division at the elementary and secondary level over the years were examined. After that, the number of students per division in private education institutions was analyzed, and the change in the number of students in elementary education and secondary education was analyzed on the axis of divisions and schools. Finally, the number of students per division and school at different levels was analyzed in detail from the perspective of their status within provinces and among Organization for Economic Cooperation and Development (OECD) countries.

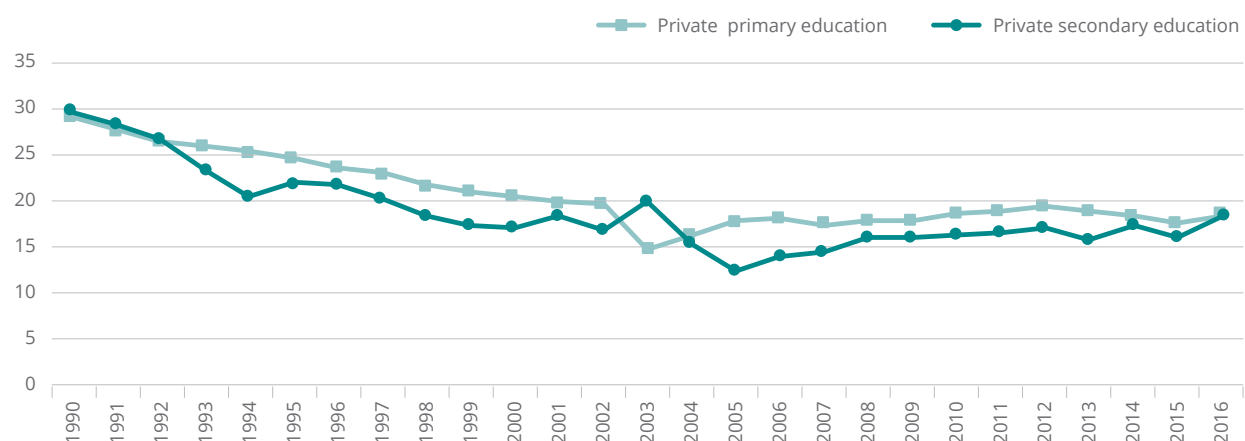
The change in the number of students per division and class room in elementary education and secondary education between 1990-2016 is shown in Figure D.2.1. According to this, the number of students per division both in elementary and secondary education between 1990 and 2016 decreased significantly, declining from 34 to 23 in elementary education and from 42 to 18 in secondary education. The number of students per classroom in elementary education decreased from 35 to 24, and in secondary education from 31 to 22 between 2005-2016. The fact that the number of students per classroom and division is taken together is important in terms of demonstrating that the practice of double-shift education in elementary education has declined. Despite the increase in the number of students in elementary education and secondary education in Turkey, the decrease in the number of students per classroom and division is an important development. The basic reason for this is the construction

Figure D.2.1 Trends in the number of students per division and classroom in elementary and secondary schools (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.
Note: Since the number of classrooms was started to be shared after 2005, developments are examined after this year.

Figure D.2.2 Trends in the number of students per division in private elementary and secondary schools (1990-2016)



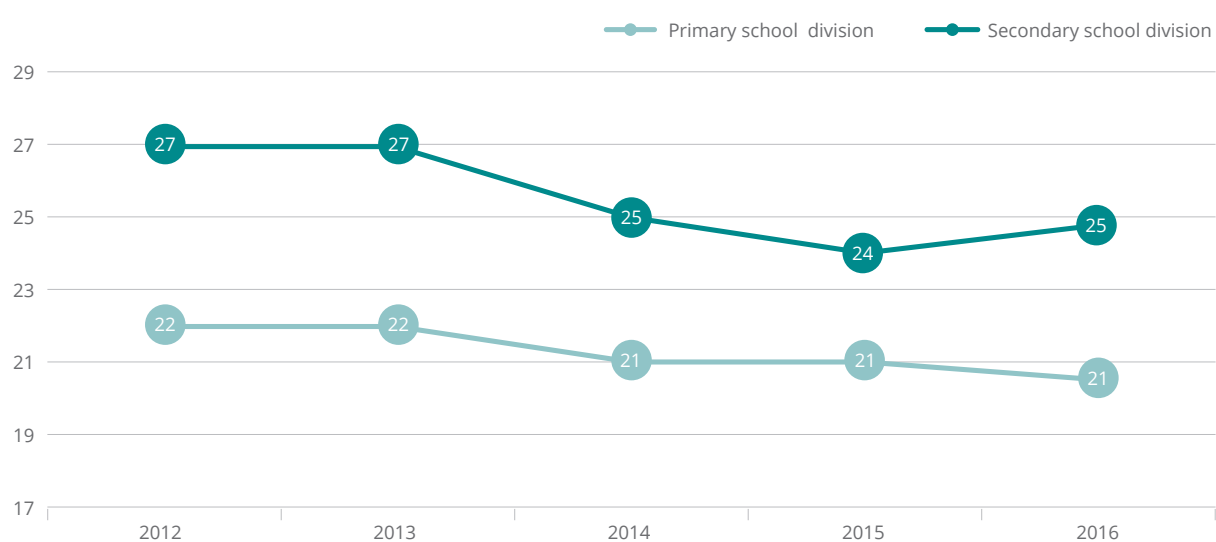
Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

of new classrooms at a high rate in recent years as it was expressed above. Besides, the number of students per classroom and division in particular in secondary education has very rapidly decreased compared to elementary education. The reasons for this is the construction of new classrooms and the increase in the number of students oriented towards open secondary education.

elementary education and private secondary education. According to this, the average number of students per division in private elementary education in 1990 was 29, and in private secondary education 30. In 2016, this decreased to 18 in both private elementary education and private secondary education. When compared to the general average, the number of students per division in private schools is lower in elementary education, and equal in secondary education.

Figure D.2.2 demonstrates the change in the number of students per division between 1990 and 2016 in private

Figure D.2.3 Trends in the number of students per division in primary and middle schools (2012-2016)



Source: Compiled using statistics published by MONE.

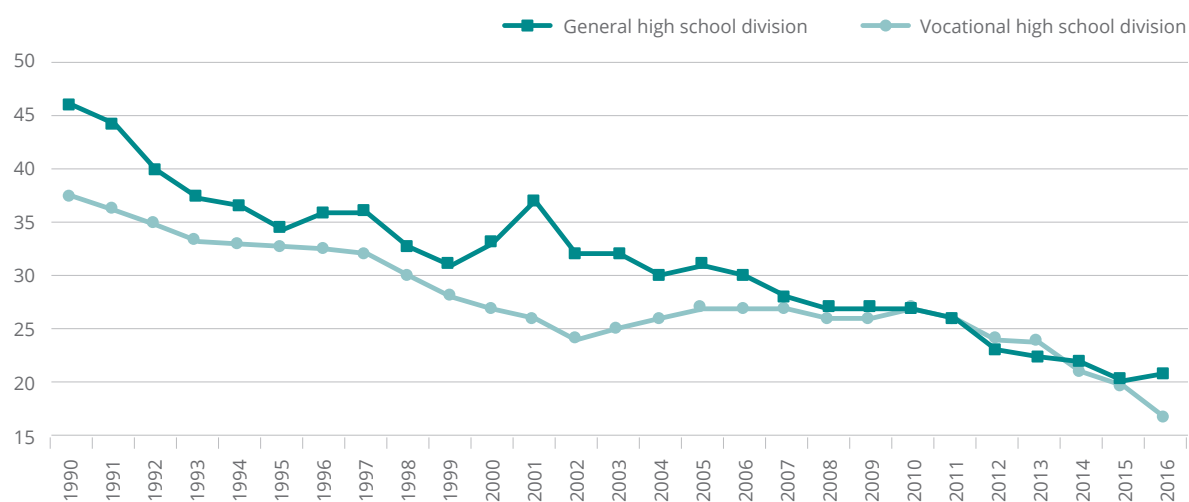
Figure D.2.4 shows the change in the average number of students per division in elementary schools and secondary schools between 1990 and 2016. According to this, whereas the number of students per division in elementary school was 22 in 2012, this number increased to 21 in 2016. The average number of students per division in the last five-year period in middle schools, decreased from 27 to 25. Taking into account the fact that the OECD average for the average number of students per division is 21 in primary schools and 23 in middle schools (See Figure D.2.16), Turkey caught up with the OECD average in primary schools, and approached the OECD average in middle schools. This data demonstrates that the need for classrooms at the middle school level in particular is still ongoing.

When the change in the number of students per division in vocational high schools and general high schools in secondary education given in Figure D.2.4 for the period between 1990 and 2016 is analyzed, it can be seen that the average number of division students in both school types has significantly decreased. Whereas the number

of students per division in general high schools in 1990 was 46, this rate significantly decreased to 31 in 1999. As a result of the coefficient difference applied in entry to university after February 28, 1997 and the increase in preference towards general high schools, the number of students per division increased to 37 in 2001. There was a continuous decrease in the number of students per division in general high schools after 2002, and this number reached 21 in 2016.

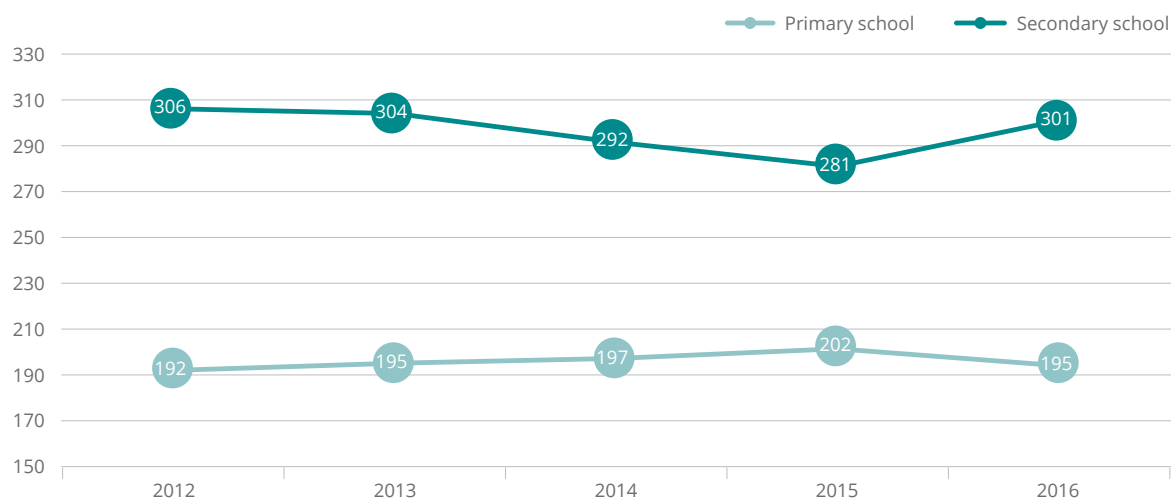
The number of students per division in vocational high schools decreased from 37 to 16 between 1990 and 2016. As a result of the decrease in orientation towards vocational high schools following February 28, the number of students per division in vocational high schools rapidly decreased and dropped to 24 in 2002. With the practice of transitioning to associate programs without an exam, the number of students per division in vocational high school increased between 2003-2010 from 24 to 27. After 2011, the number of students per division in vocational high schools started to rapidly decrease.

Figure D.2.4 Trends in the number of students per division according to school type in secondary schools (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure D.2.5 Trends in the number of students per school in primary and middle school (2012-2016)

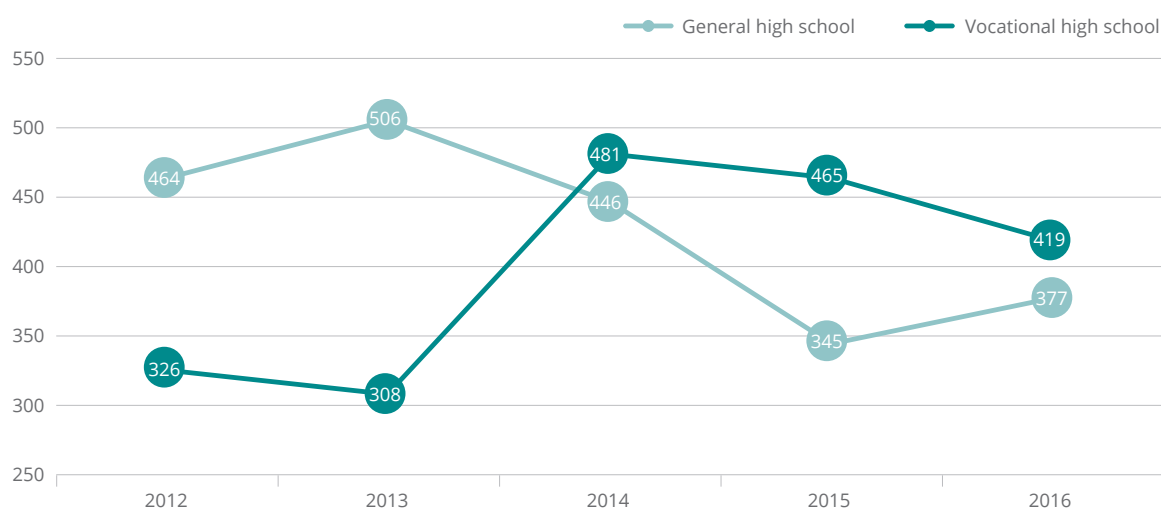


Source: Compiled using statistics published by MONE.

Figure D.2.5 shows the change in the number of students per school at the primary middle school level between 2012-2016. According to this, whereas the number of students per school was 192 in primary schools and 306 in middle schools per school in 2012, this number rose to 195 in primary schools and 301 in middle schools schools in 2016. In both cases, the average number of students per school did not change significantly over the last five years .

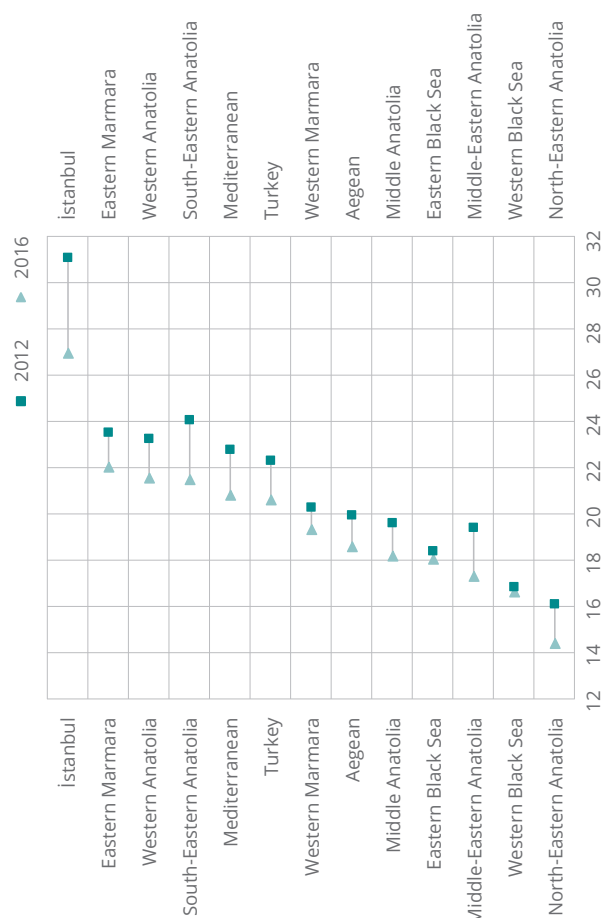
The change in the number of students per school in general high schools and vocational high schools in secondary education between 2012 and 2016, is given in Figure D.2.6. According to this, the number of students per school in vocational high schools increased from 326 to 419 between 2012-2016 and decreased from 464 to 377 in general high schools. With the opening of new schools, the number of students per school in general secondary education decreased. The basic reason for the increase

Figure D.2.6 Trends in the number of students per school according to school types in secondary education (2012-2016)



Source: Compiled using statistics published by MONE.

Figure D.2.7 Number of students per division by region in primary schools (2012-2016)

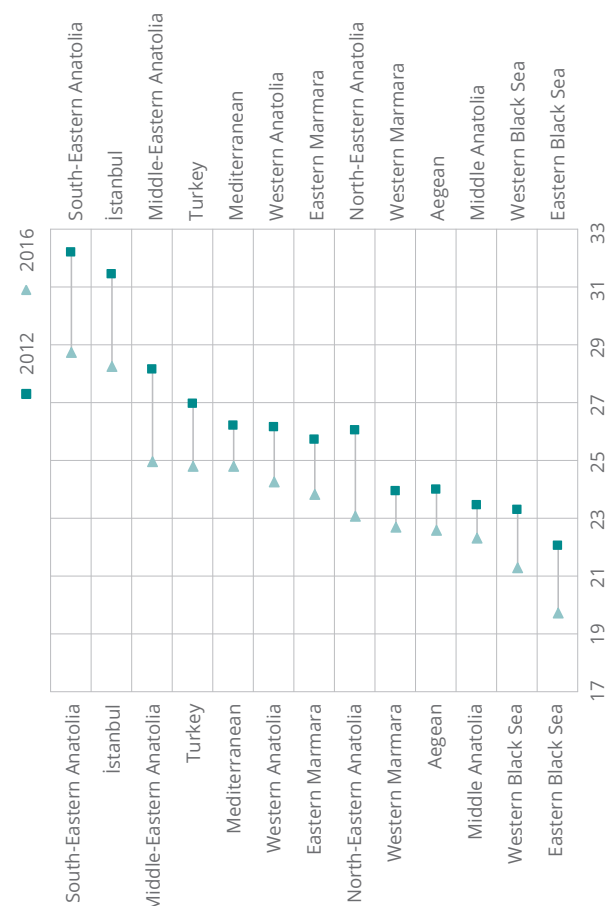


Source: Compiled using statistics published by MONE.

in the number of students per school in vocational high schools is the conversion of a number vocational high schools with different names on the same campus into one single school with the school transformations in 2014.

Figure D.2.7 shows the number of students per division in primary schools by region between 2012 and 2016. According to this, there was a significant decrease in the rate of of students per division in regions other than the Black Sea region. The number of students per division between 2012-2016 decreased more rapidly in Istanbul and South-Eastern Anatolia regions compared to other regions. The number of students per division between 2012-2016 decreased from 27 to 24 in South-Eastern Anatolia Region and from 31 to 27 in Istanbul. It can be

Figure D.2.8 Number of students per division by region in middle schools (2012-2016)

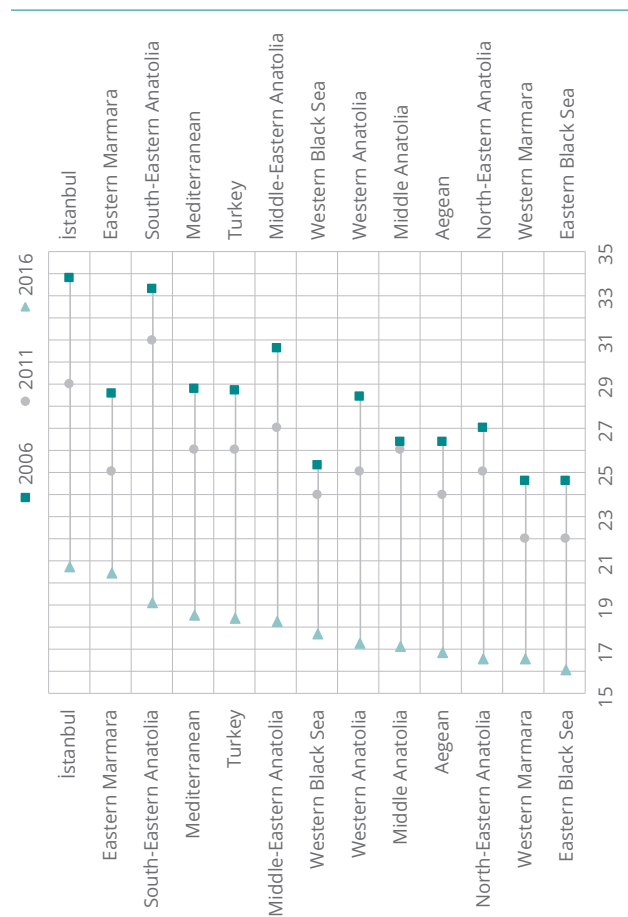


Source: Compiled using statistics published by MONE.

seen that there is a big difference between the regions in the figure in terms of the number of students per division. The number of students per division is 27 in Istanbul, 22 in Eastern Marmara, 14 in North-Eastern Anatolia and 17 in the Western Black Sea region.

Figure D.2.8 shows the number of students per division in middle schools by region between 2012 and 2016. According to this, the number of students per division decreased in middle schools in all regions. However, there is still a differentiation in the number of students per division between regions. Whereas the number of students per division in secondary schools was 29 in the South-Eastern Anatolia Region and 28 in Istanbul, it was 20 in the Eastern Black Sea and 21 in Western Black Sea

Figure D.2.9 Number of students per division by region in secondary education (2006, 2011 and 2016)

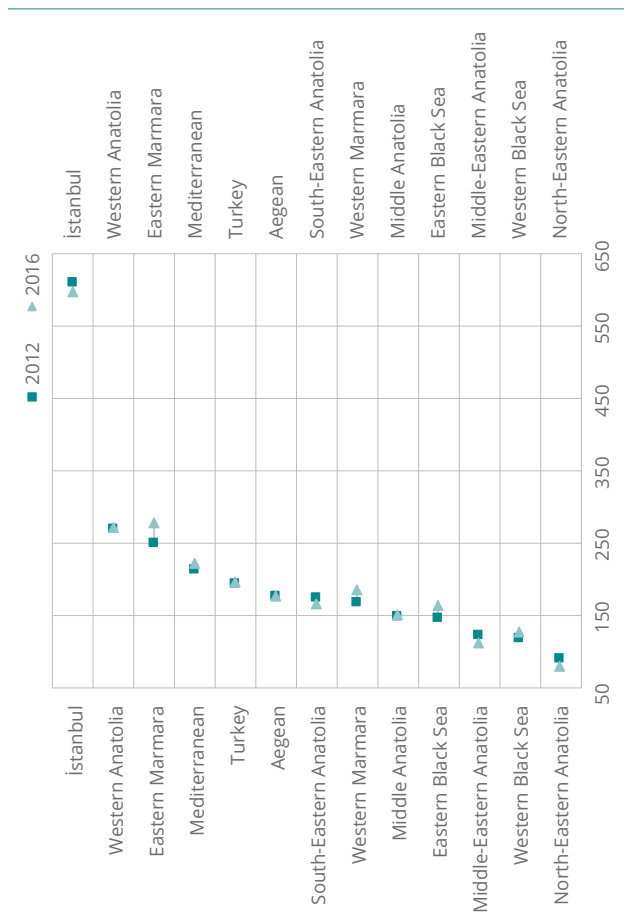


Source: Compiled using statistics published by MONE.

in 2016.

Figure D.2.9 gives the number of students per division in secondary education by region in 2006, 2011 and 2016. According to this, in the period between 2006 and 2016, the number of students per division in secondary education significantly decreased in all regions. For example, the number of students per division in secondary education decreased from 34 to 21 in Istanbul, from 33 to 19 in South-Eastern Anatolia and from 31 to 19 in Central Eastern Anatolia. Despite the fact that number of students per division demonstrated a very important development in secondary education, the inequality between regions persists. However, the inequality in the number of students per division by region in secondary education is

Figure D.2.10 Number of students per school by region in primary schools (2012-2016)

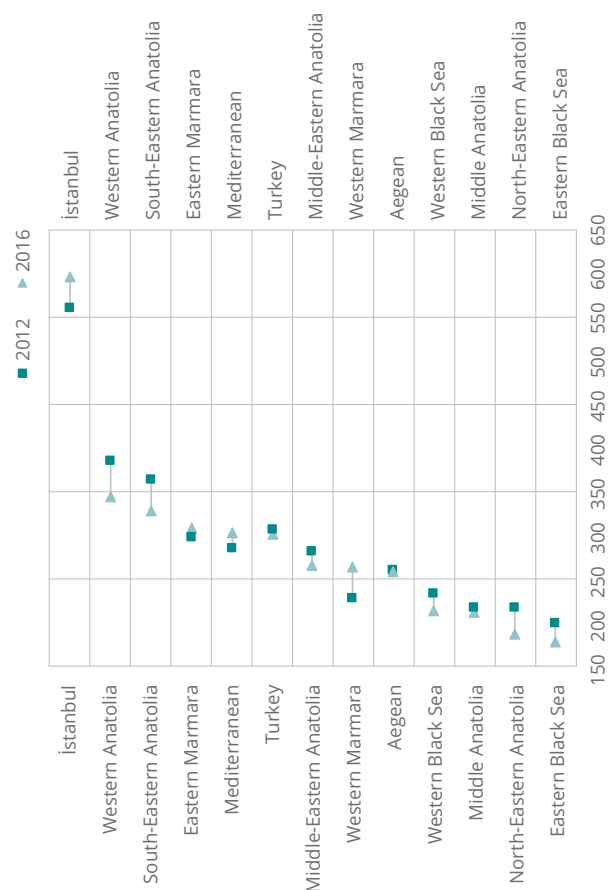


Source: Compiled using statistics published by MONE.

less compared to primary school and middle school. The difference between the region with the highest number of students per division at the primary school level and the one with the lowest is a gap of 13 points, in middle schools 9 points and in high schools 5 points. The number of students per division in secondary education is 21 in Istanbul, 20 in Eastern Marmara, 16 in South Black Sea and in the Western Black Sea region 17.

Figure D.2.10 shows the number of students per school in primary schools by region between 2012 and 2016. According to this, in the period from 2012 to 2016, the number of students per school according to the Turkish average remained fixed at 192 per school in primary schools, and no significant change was seen in the number

Figure D.2.11 Number of students per school in different regions in middle schools (2012-2016)

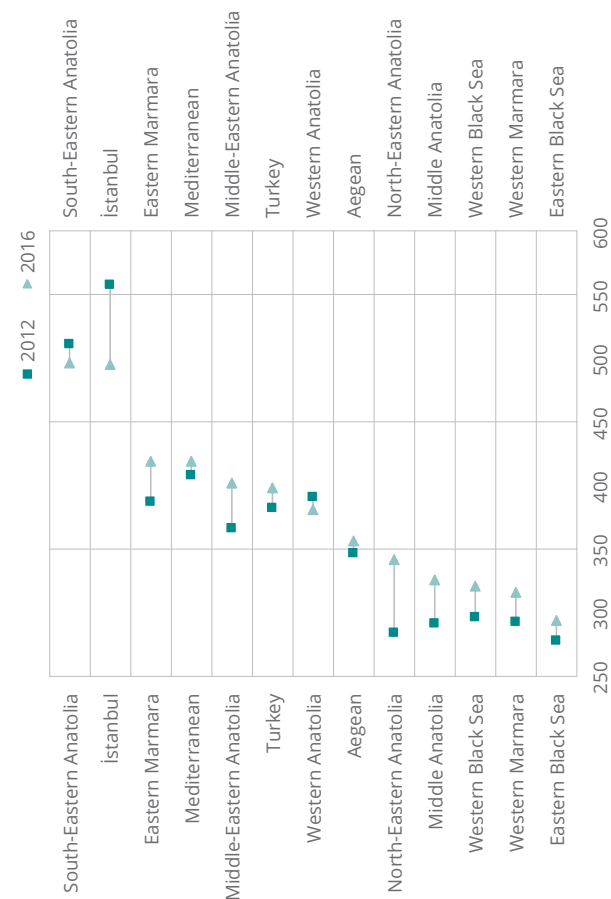


Source: Compiled using statistics published by MONE.

of students per school across regions, excluding Eastern Marmara. However, the number of students per school differs significantly among regions. The number of students per school is 595 in Istanbul, 267 in Western Anatolia, 78 in North-Eastern Anatolia and 121 in Central East Anatolia.

The change in the number of students per school in middle schools between 2012 to 2016 across regions is shown in D.2.11. According to this, the number of students per school in middle school increased in some regions but decreased in others between 2012-2016. During these years, the number of students per middle school increased from 560 to 597 in Istanbul, 228 to 263 in Western Marmara, 296 to 308 in Eastern Marmara, 285 to 302 in Mediterranean, and on the other hand it decreased from 386 to 344 in Eastern Anatolia, from 364 to 329 in South Eastern Anatolia, and from 217 to 186 in North Eastern Anatolia. Moreover, the most significant difference between the number of

Figure D.2.12 Number of students per school in secondary education according to region (2012-2016)

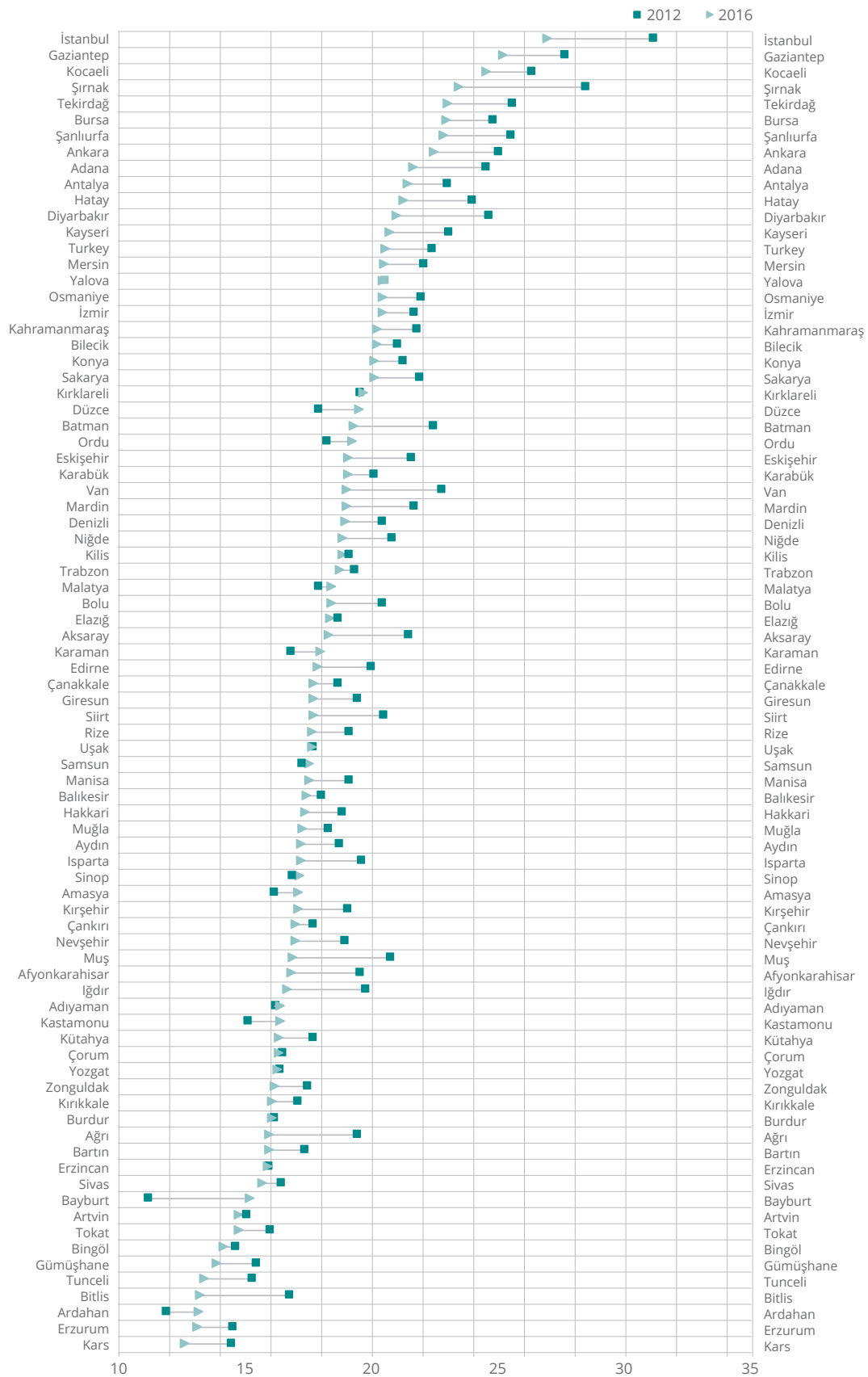


Source: Compiled using statistics published by MONE.

students per school at the middle school level between regions continues. Whereas there are 597 students per school in Istanbul, this number is 176 in Eastern Black Sea. The number of students per school in middle schools is higher both in terms of Turkey's averages and the regional averages. Whereas there are primary schools with a small number of students with such practices as combined classes, middle schools are greater since they are located in relatively central places and there is a greater need for different division teachers.

Figure D.2.12 shows the number of students per school according to region in secondary education over the last ten year period between 2006-2016. According to this, the number of students per school at the secondary education level provides a different table compared to the primary school and middle school level. First of all, it is striking that, as in the case of other levels, the number of students per

Figure D.2.13 Number of students per branch in primary school by province (2012-2016)



Source: Compiled using statistics published by MONE.

school in secondary education significantly differs among regions. The number of students per school in secondary education increased from 382 to 389 between 2006-2016. In addition to this, whereas the number of students per school decreased in secondary education in South Eastern Anatolia, Istanbul and Western Anatolia between 2006-2016, it increased in other regions. Whereas the number of students per school in secondary education is 497 in South Eastern Anatolia and 496 in Istanbul which have the highest numbers, it is lowest in the Western Black Sea region with 297 and the Eastern Black Sea region with 295.

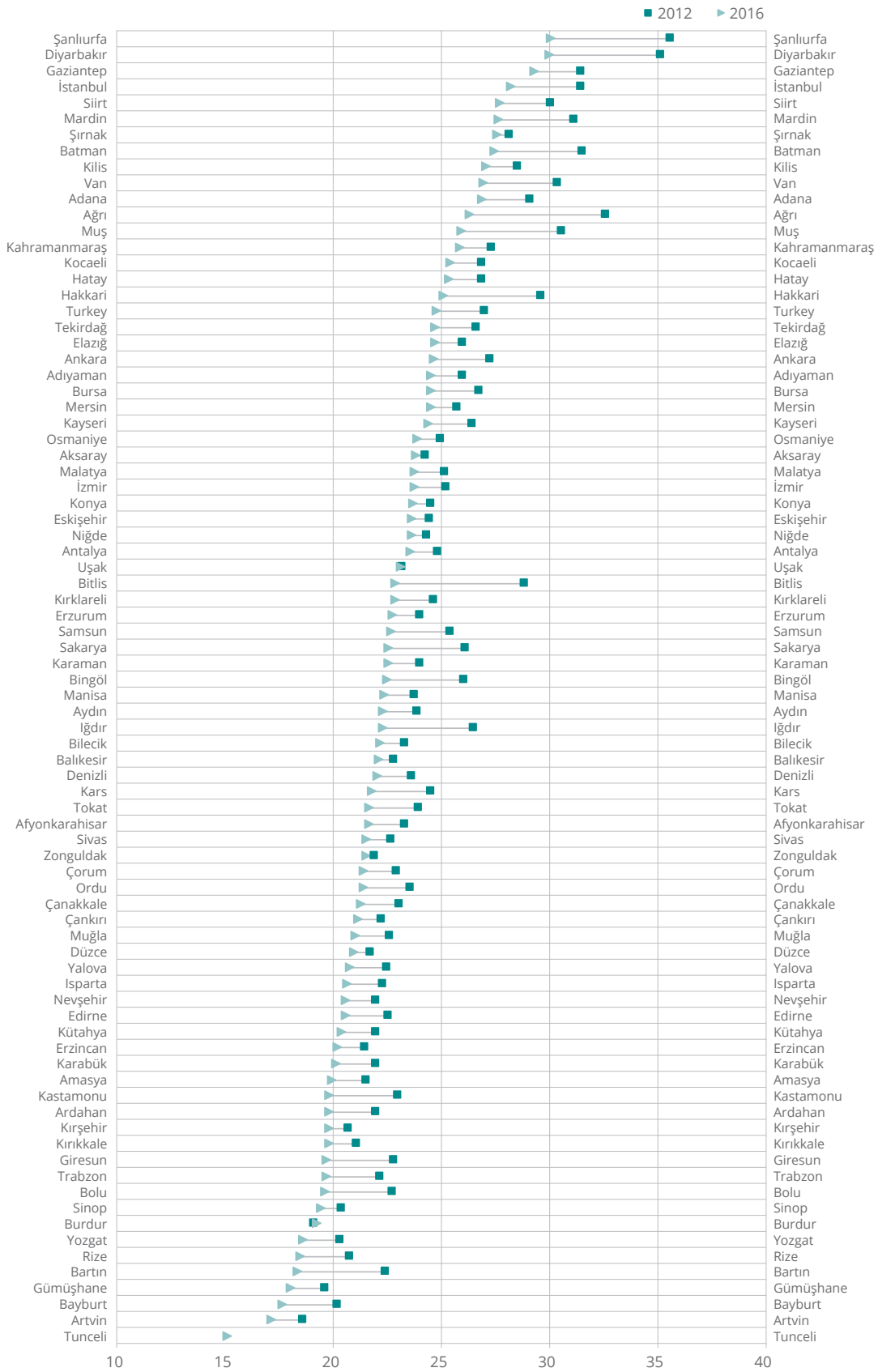
Figure D.2.13 shows the changes between provinces in the number of students per division in primary schools between 2012 and 2016. Examination of the average number of students per division at provincial level is important in the sense that it gives more detailed information about geographic differences. According to this, it can be seen that the number of students per division in primary schools differs extremely between provinces. Whereas the number of students per division in primary schools is the highest in İstanbul (27), Gaziantep (25), Kocaeli (24), Şırnak (23), Tekirdağ (23), Bursa (23), Şanlıurfa (23), Ankara (22) and Adana (22), provinces with the lowest number of students per division in primary schools with 13 students are Kars, Erzurum, Ardahan, Bitlis and Tunceli provinces. In addition to this, whereas the number of students per division decreased almost in every province in Turkey

between 2012-2016, it increased in Düzce, Ordu, Karaman, Amasya, Kastamonu, Bayburt and Ardahan.

Figure D.2.14 gives the change over years 2012-2016 in the number of students per division by provinces in middle school. According to this, the number of students per division in middle school between 2012-2016 increased in Ardahan, Bayburt, Amasya, Kastamonu, Karaman, Ordu and Düzce provinces and decreased over time in other provinces. Another issue is that there is a significant difference in the number of students per division in middle schools among provinces. When the year 2016 is taken as a basis, the average number of students per division in middle schools, was highest in Şanlıurfa (30), Diyarbakır (30), Gaziantep (29), İstanbul (28), Siirt (28), Mardin (28) and Şırnak'ta (28), and it is the lowest in Tunceli (15), Artvin (17), Bayburt (18), Gümüşhane (18), Bartın (18), and in Rize (18).

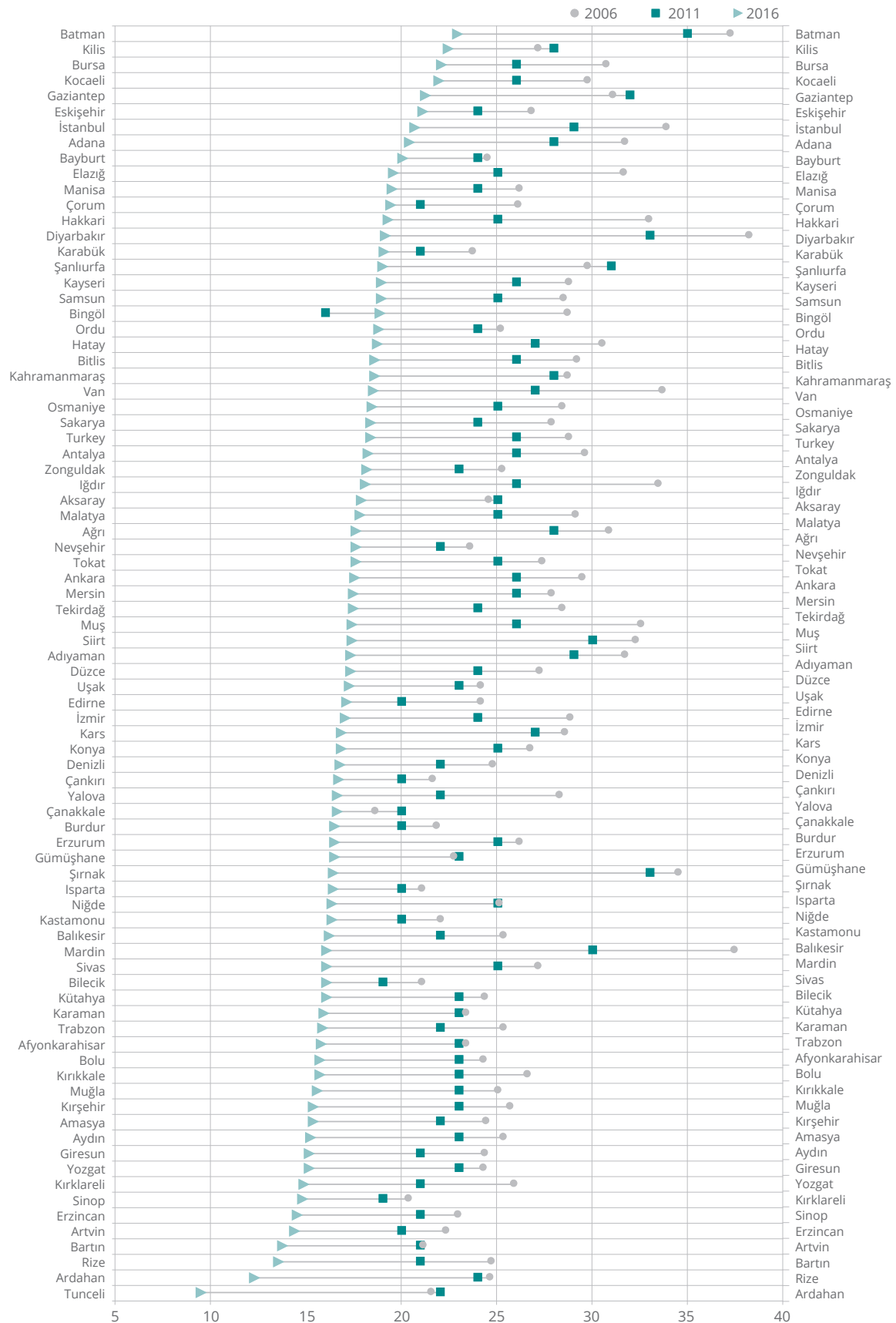
According to the provinces listed in D.2.15, the number of students per division in secondary education is shown over the years 2006, 2011 and 2016. According to this, in 2011, it could be seen that the number of students per division in secondary education increased in Kilis, Gaziantep, Şanlıurfa and Çanakkale in 2011 compared to 2006, and that it decreased in all of the other provinces. In 2016, it can be seen that in all other provinces than Bingöl, the number of students per division in secondary education significantly decreased. Whereas in 2016 there

Figure D.2.14 Number of students per branch in middle school by province (2012-2016)



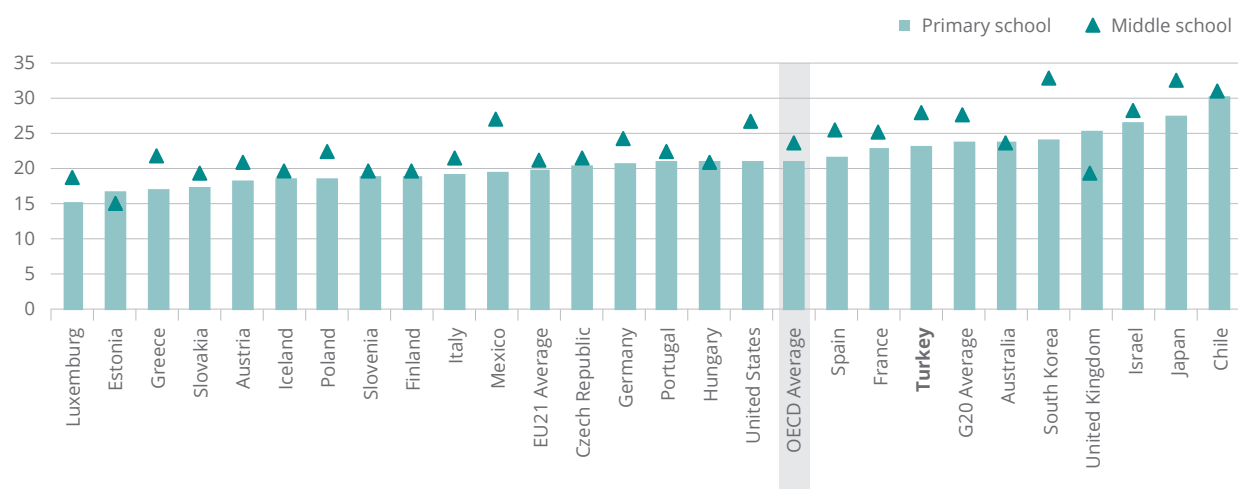
Source: Compiled using statistics published by MONE.

Figure D.2.15 Number of students per branch by province in secondary education (2006, 2011 and 2016)



Source: Compiled using statistics published by MONE.

Figure D.2.16 Average class size by level in OECD countries (2015)



Source: OECD (2017)

were 23 provinces with secondary education classes larger than Turkey's overall average, other provinces had a class population either equal to or under Turkey's average. When the year 2016 is taken as a basis, provinces where the average number of students per division in secondary education is lowest include Batman (23), Kilis (22), Bursa (22), Kocaeli (22), Gaziantep (21), Eskişehir (21) and İstanbul (21), Tunceli (9) and Ardahan (12).

In order to determine the average class size in different levels in Turkey compared to the class size in other countries, Figure D.2.16 shows the average class size for the year 2015 in primary school and middle school levels in OECD countries. According to this, the OECD average in terms of class size in 2015 was 21 in primary schools, and 23 in secondary schools. Among OECD countries, the smallest class size at the primary school level is in Luxembourg (16), Lithuania (16), Greece (17) and Austria (18); and the highest class population is in Israel (27), Japan (27) and the UK (26).

In middle schools, the lowest class size average is in Lithuania (15), Estonia (18), UK (19), Luxembourg (19) and Slovakia (19), and the most crowded classes are found in Turkey (34), Japan (32), Korea (30) and Mexico (28). Whereas the Turkish average given in Figure D.2.16 according to OECD calculations is 23 in primary schools, it is much high in middle schools with an average of 34. According to this, the average class size in primary schools in Turkey (23) is slightly over the OECD average, whereas the middle school class size average is at the highest level compared to other countries.

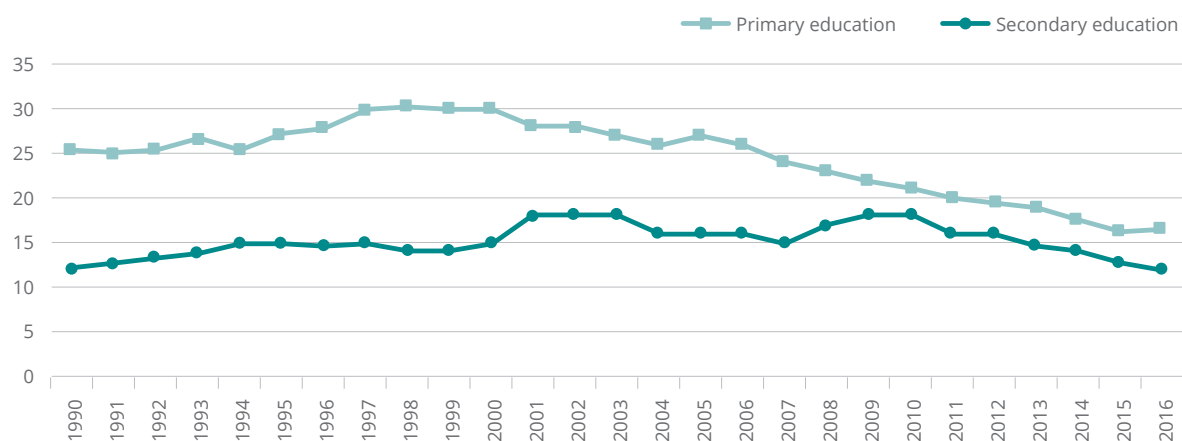
The student teacher ratio, which expresses the number of students per teacher, is an important indicator considered alongside education environments in terms of evaluating the quality of education in a country. For that reason, under this indicator, first the number of students per teacher by level is studied over the years under this indicator. After examining the teacher student ratio in private education institutions, the situation on the basis of region and province is analyzed in detail by level. Finally, evaluations are made of existing data in order to determine Turkey's position among OECD countries from the point of view of the student-teacher ratio.

Figure D.3.1 demonstrates changes in the number of students per teacher at the elementary and secondary education levels between 1990 and 2016. According to this, the number of students per teacher in elementary education decreased from 25 to 17 between 1990 and 2016. The number of students per teacher in secondary education demonstrates a fluctuating trend over the years, however, the number which was 12 in 1990 was 12 again in 2016. The number of students per teacher decreased after

2005 in elementary education. The number of students per teacher decreased as a result of not assigning a high number of teachers after 2003. In secondary education, the number of students per teacher, which was 16 and 15 in 2004-2007 respectively, had an increase trend between 2008-2010, and then had a decreasing trend after that. As a result of extending high schools to four years and increasing the rates of access to secondary education, the number of students per teacher increased between 2007-2010, and after that the number of students per teacher decreased as a result of a high number of teacher assignments.

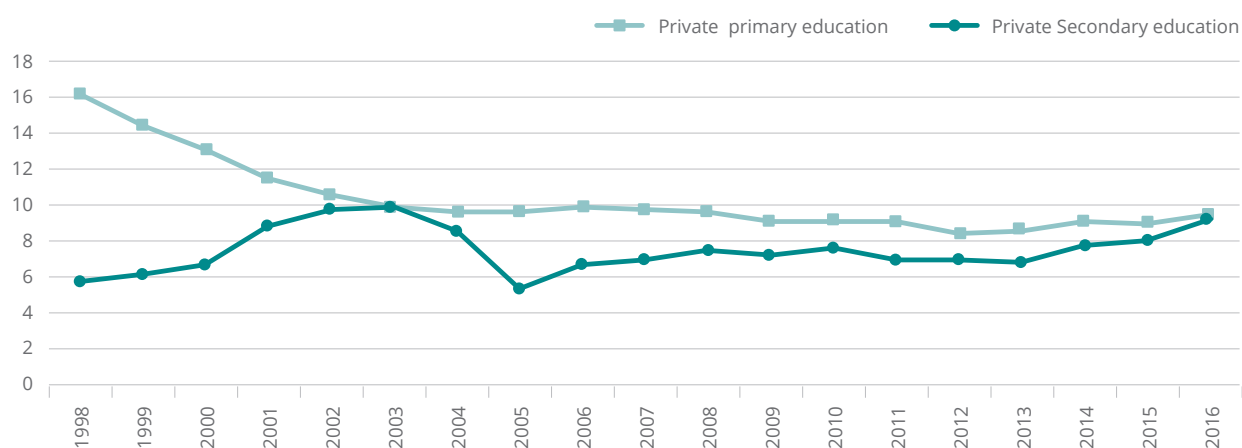
In Figure D.3.2, when we examine the number of students per teacher in elementary education between 1990 and 2016 and in private education, a continuous decrease is observed. As a matter of fact, whereas the number of students per teacher in private elementary education was 47 in 1990, this number decreased to 9 in 2016. In particular, there was a sharp decrease between 1990-1998, which was followed by a more regular decrease trend between 1999-2002. There was no important difference in

Figure D.3.1 Trends in number of students per teacher by level (1990-2016)



Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

Figure D.3.2 Trends in the number of students per teacher in private elementary secondary schools (1998-2016)



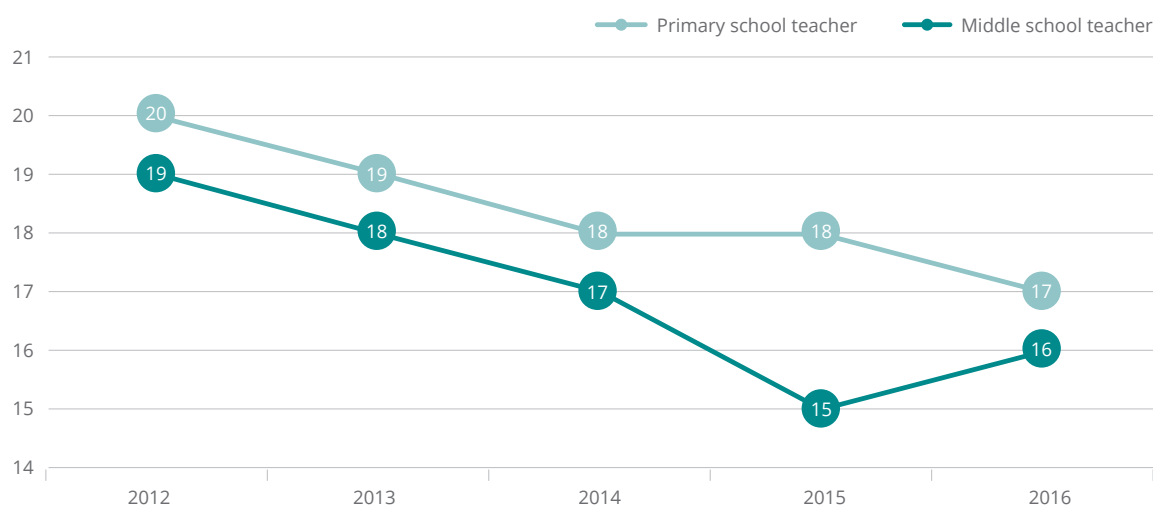
Source: The figure, prepared originally by Eđitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

the following years. The number of students per teacher in private secondary educations between 1990-2016 had a fluctuating trend, and increased from 5 to 9.

Figure D.3.3 provides the number of students per teacher in elementary school and secondary school levels between 2012 and 2016. According to these, whereas the number of students per teacher in primary schools was 20 in

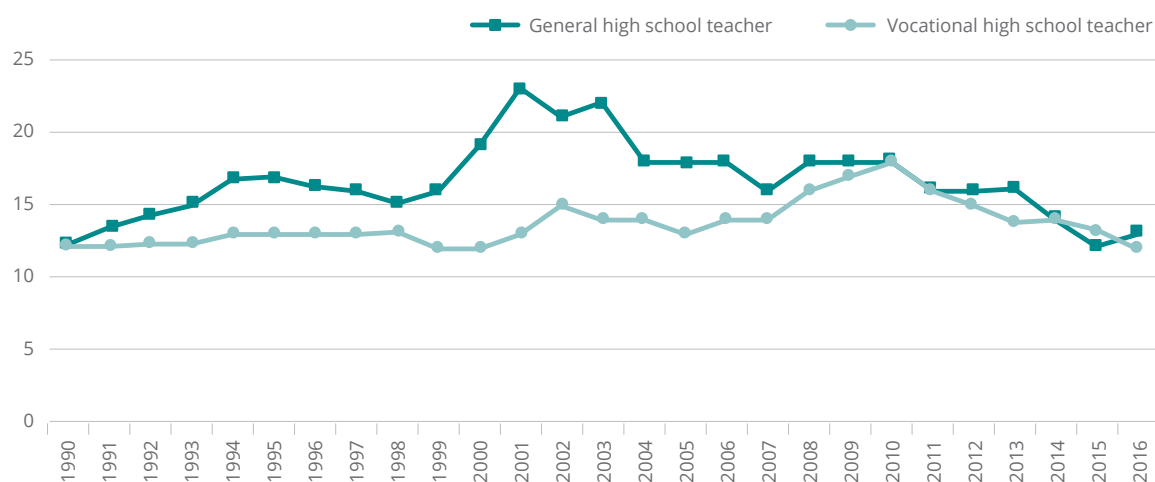
2012, this number decreased to 17 in 2016. In middle schools, the number of students per teacher, which was 19 in 2012, decreased to 16 in 2016. The number of students per teacher, which was 15 in 2015 in secondary schools, slightly increased in 2016. The reason for this is the increase in the number of students enrolled in primary schools as the school start age was reduced to 60 months under the scope of Law No. 6287 that came into force in

Figure D.3.3 Trends in the number of students per teacher in primary schools and middle schools (2012-2016)



Source: Compiled using statistics published by MONE.

Figure D.3.4 Trends in the number of students per teacher according to school type in secondary education (1990-2016)

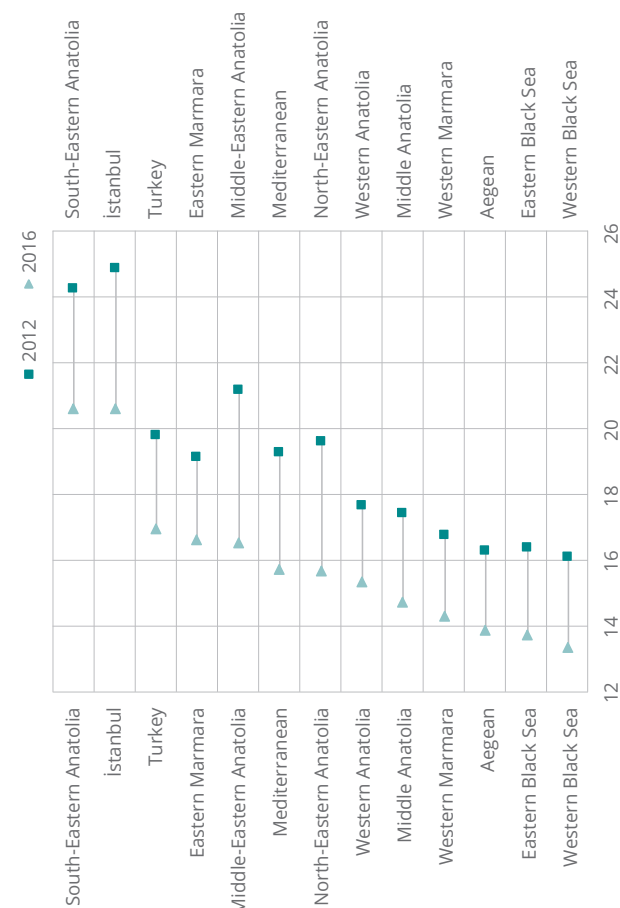


Source: The figure, prepared originally by Eğitim-Bir-Sen (2016a) using statistics published by DIE, TUIK and MONE in various years was updated by the authors.

2012. Due to the fact that students who were enrolled in primary school in 2012 completed primary school in 2015 and enrolled in middle school, the number of students in middle schools increased and the teacher student ratio increased compared to the previous year in connection with this.

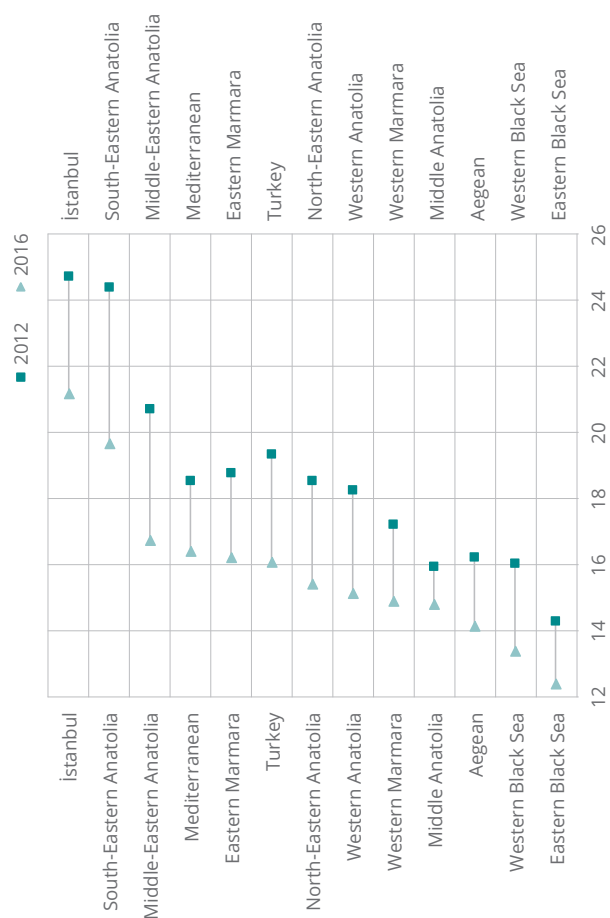
Figure D.3.4 gives the number of students per teachers in secondary education by school type between 1990 and 2016. According to this, the number of student per teacher, which was 12 in general high schools and vocational high schools in 1990, demonstrated a fluctuating trend until 2010, and increased to 18. The number of students per teacher demonstrated a more fluctuating trend in general high schools compared to vocational high schools between 1990 and 2010. In particular, due to the fact that the number of students per teacher increased rapidly after 1998 in general high schools and a different coefficient is applied for vocational high schools as it was expressed above, the preference towards general high schools increased. The number of students per teacher between 2010-2016 was 13 in general high schools and 12 in vocational high schools with a decline in both types of high schools.

Figure D.3.5 Number of students per teacher by region in primary schools (2012-2016)



Source: Compiled using the statistics published by MONE.

Figure D.3.6 Number of students per teacher by region in middle schools (2012-2016)

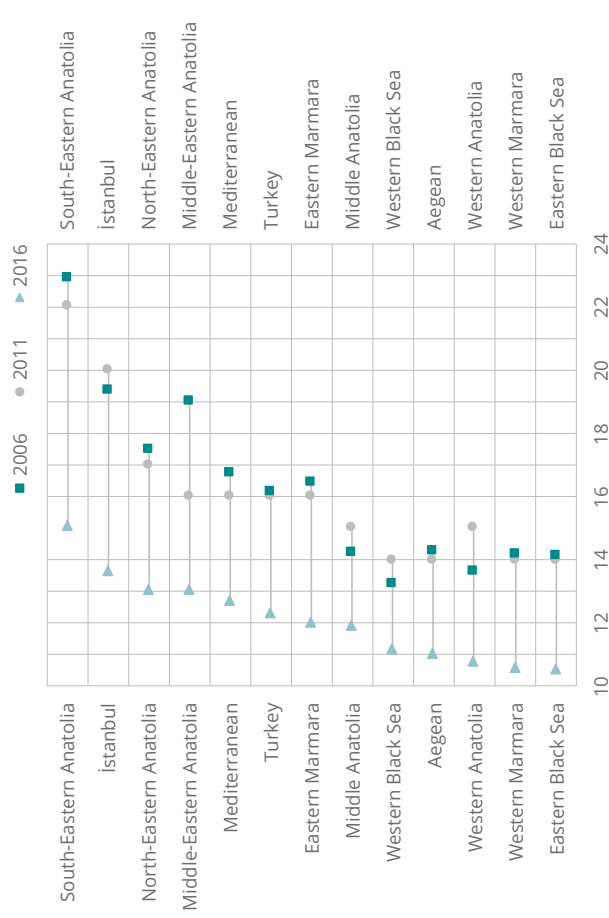


Source: Compiled using the statistics published by MONE.

When we look at Figure D.3.5, which gives the number of students per teacher in primary schools between 2012-2016, it can be seen that there is a significant decrease in all regions in general. According to this, the number of students per teacher has decreased in all regions over time. Another issue is the important change in the number of students per teacher across regions. Whereas the regions where the number of students per teacher was the highest in 2016 were Istanbul (21) and South Eastern Anatolia (21) respectively, regions where this was the lowest were respectively the Western Black Sea (13), Eastern Black Sea (14) and Aegean (14) regions.

Figure D.3.6 shows the number of students per teacher in middle schools by region between 2012 and 2016. According to this, the number of students per teacher in

Figure D.3.7 Number of students per teacher by region in secondary schools (2006, 2011 and 2016)



Source: Compiled using statistics published by MONE.

middle schools decreased in all regions between 2012-2016. In addition to this, it can be seen that the class sizes in middle schools changed significantly between the regions. The regions with the highest number of students per teacher in secondary schools in 2016 were respectively Istanbul (21) and South-Eastern Anatolia (20), and the regions with the lowest number were the Eastern Black Sea (12), Western Black Sea (13) and Aegean (14) regions.

Figure D.3.7 gives the number of students per teacher by region in secondary education over the years 2006, 2011 and 2016. The important issue here is that there is no significant change in the number of students per teacher between 2006-2011. The reason for this is the extension of high schools to four years, and the increase in the schooling rate.

Between 2006-2011, the number of students per teacher decreased in South Eastern Anatolia and the Central Eastern Anatolia regions, and it increased in other regions. Between 2011-2016, the number of students per teacher increased significantly in all regions. However, the inequality between regions continued at a significant ratio. To put it more concretely, regions where the student-teacher ratio was the highest in secondary education in 2016 and above Turkey's average are respectively South-East Anatolia (15), Istanbul (14), North-East Anatolia and Central-East Anatolia (13). The Eastern Black Sea, Western Marmara, Western Anatolia and Aegean regions, which have an 11 student average, are the regions with the lowest number of students per teacher.

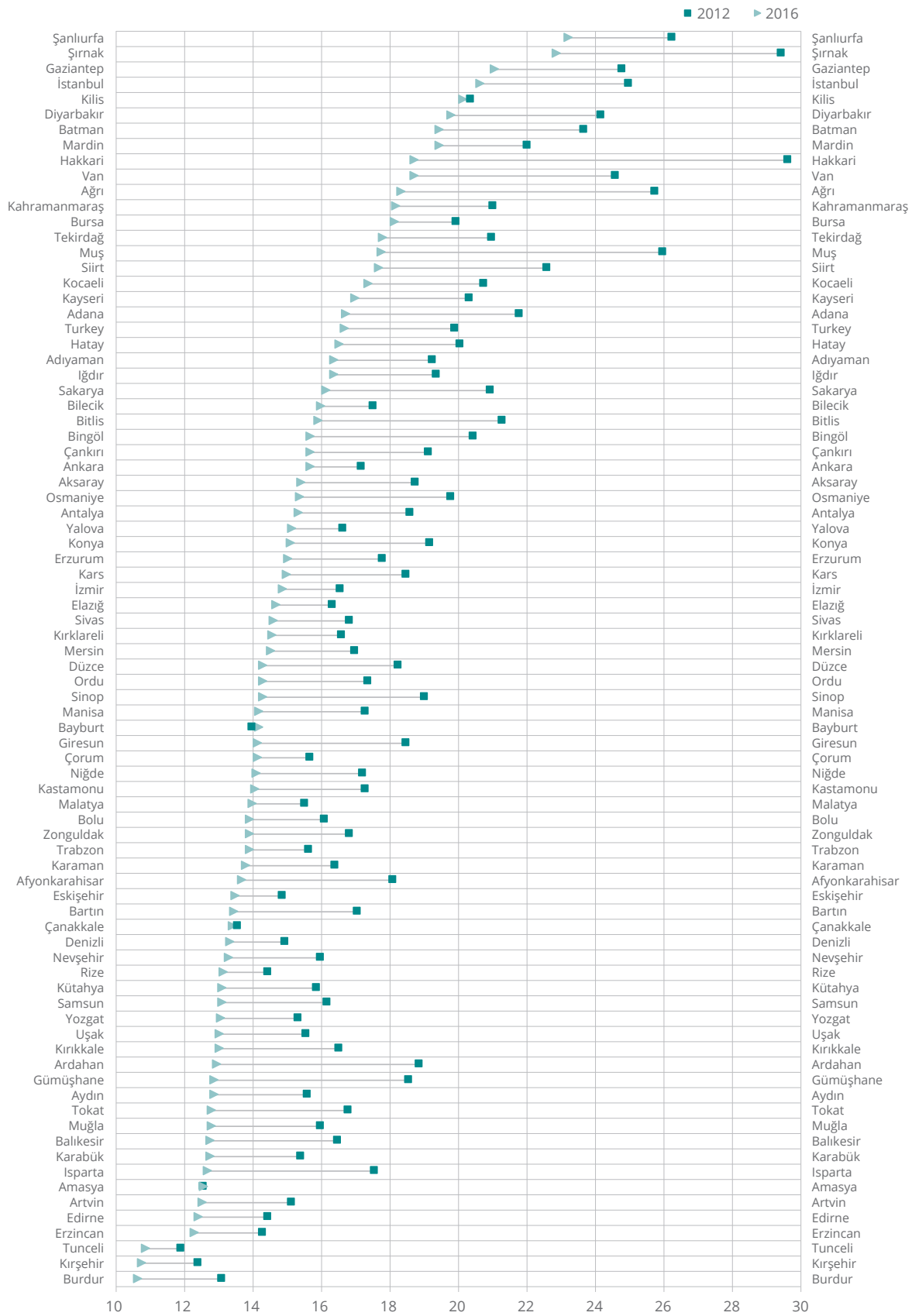
Figure D.3.8 shows the change between provinces in the number of students per teacher in primary schools between 2012 and 2016. According to this, the number of students per teacher in middle schools decreased in all provinces other than Bayburt between 2012-2016. However, the number of students per teacher in primary schools significantly changed between the provinces. In 2016, the average number of students per teacher

in primary school is highest in Şanlıurfa (23), Şırnak (23), Gaziantep (21), Istanbul (21), Kilis (20) and Diyarbakır (20). Whereas, the number of students per teacher in primary school in Burdur, Kırşehir and Tunceli (11) is the lowest with.

Figure D.3.9 gives the number of students per teacher by province in middle schools between 2012 and 2016. According to this, it can be observed that the number of students per teacher in middle schools in 2016 increased in Yozgat and Artvin provinces compared to the year 2012, and decreased in all other provinces. In addition to this, the inequality between provinces persists. Provinces where the number of students per teacher in middle schools is the highest based on the year 2016 are respectively Şanlıurfa (21), Şırnak (21), İstanbul (21), Gaziantep (20), Hakkâri (20), Van (20), Ağrı (20) and in Tunceli (9), Burdur (11), Kırşehir (11), Erzincan (11), Amasya(11) and Gümüşhane (11) the number of students per teacher in middle schools is the lowest.

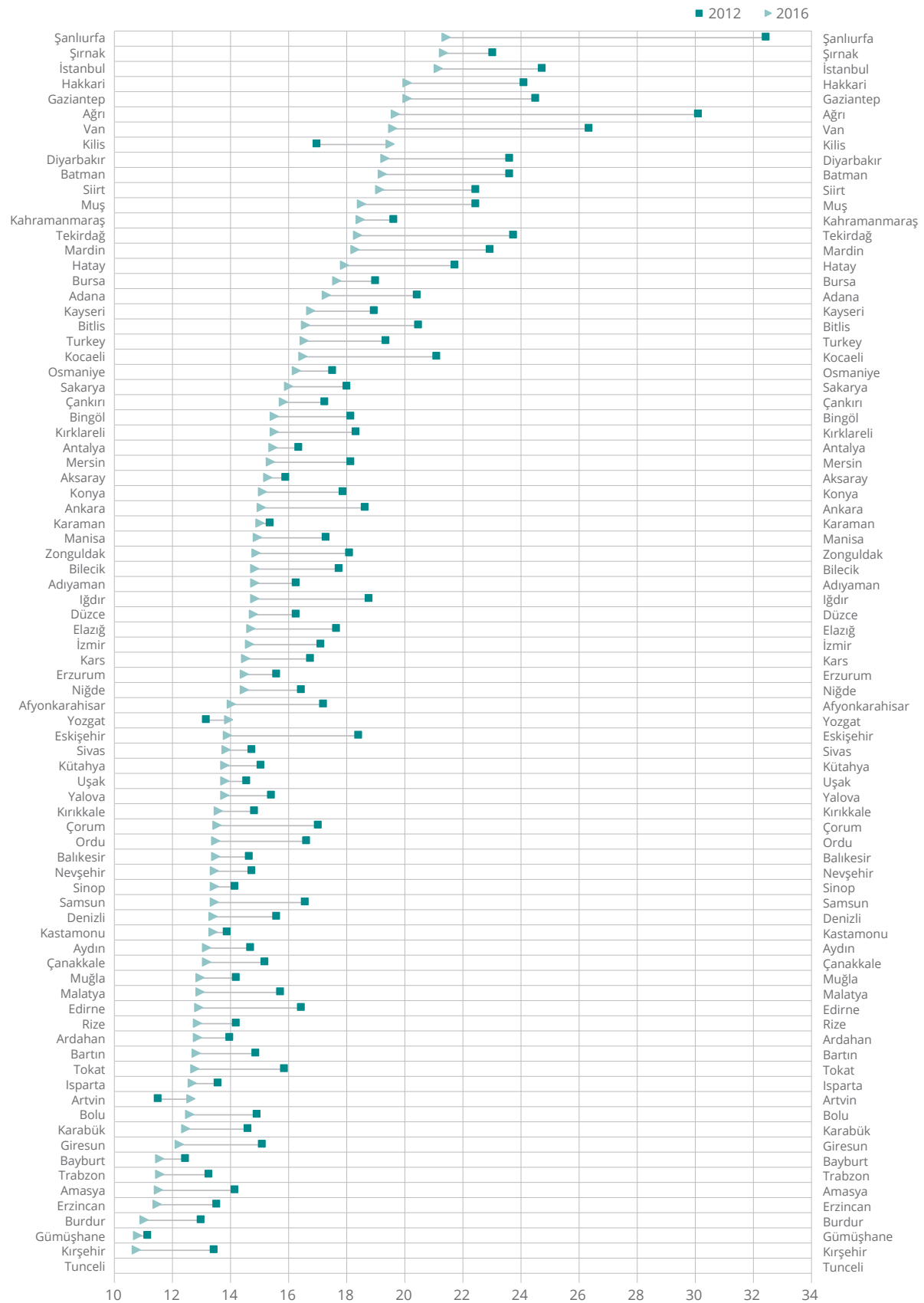
According to the provinces given in Figure D.3.10, when we look at the number of students per teacher in secondary

Figure D.3.8 Number of students per teacher by province in primary schools (2012-2016)



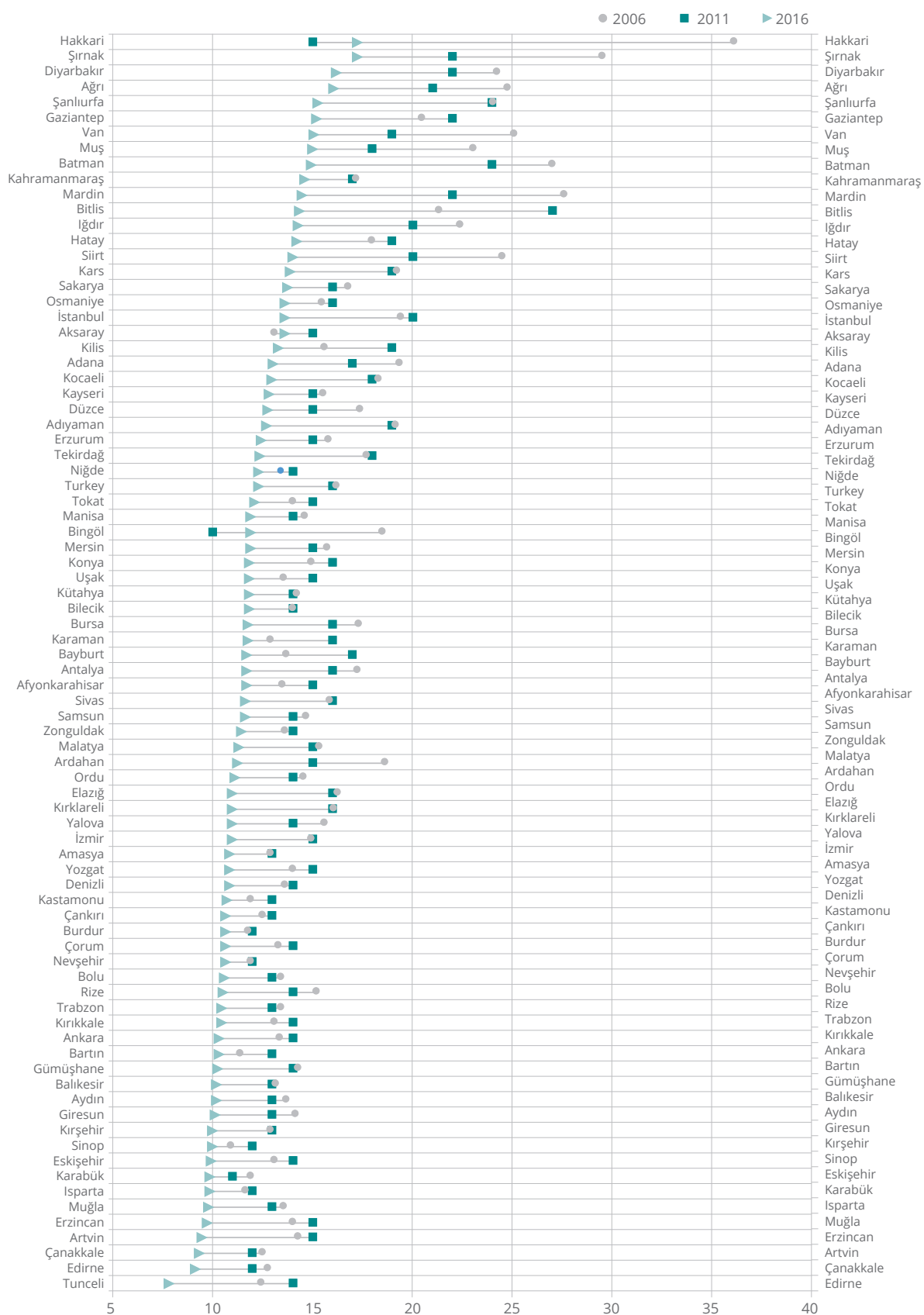
Source: Compiled using statistics published by MONE.

Figure D.3.9 Number of students per teacher by province in middle schools (2012-2016)



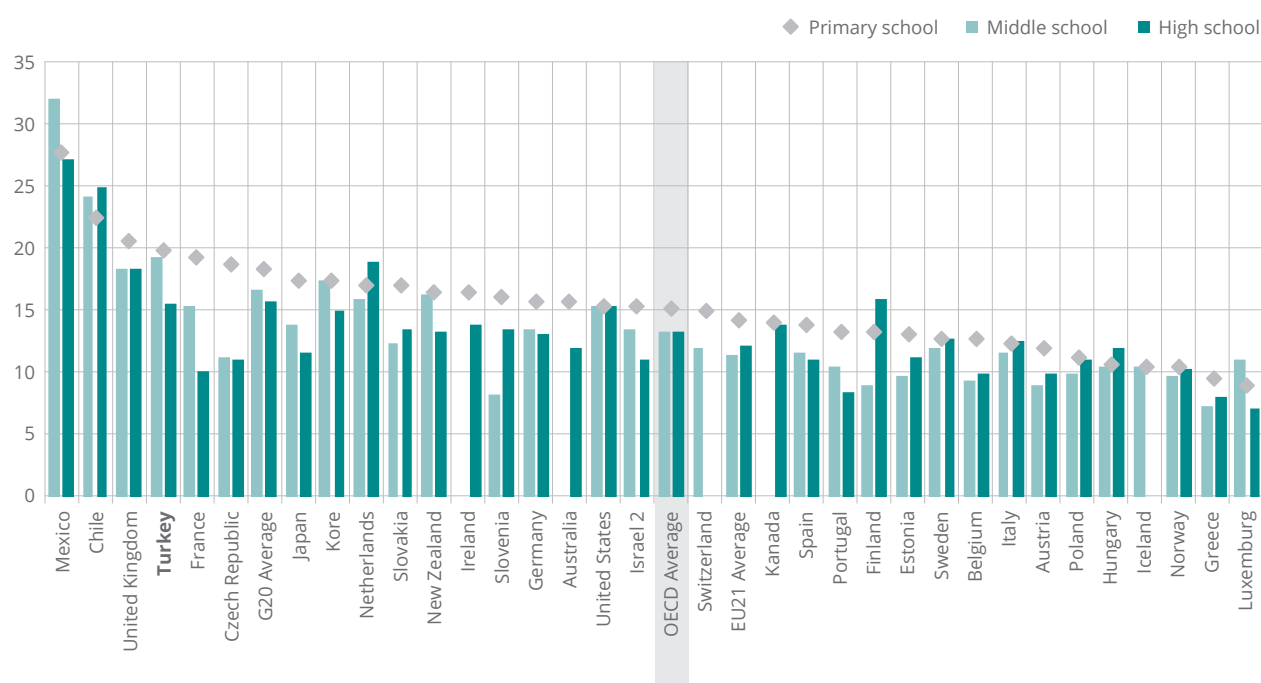
Source: Compiled using statistics published by MONE.

Figure D.3.10 Number of students per teacher by province in secondary schools (2006, 2011 and 2016)



Source: Compiled using statistics published by MONE.

Figure D.3.11 Student-teacher ratios according to level in OECD countries (2015)



Source: OECD (2017)

Note: Ordered from big to small based on the student-teacher rates at the primary school levels in different countries.

education between 2006, 2011 and 2016, it can be seen that the number of students increased in many provinces between 2006 and 2011. The basic reason for this increase is the extension of the high school period to 4 years in 2005 and the increase in the schooling rates. Between 2011 and 2016, the number of students per teacher in secondary education decreased in all provinces other than Hakkari and Bingöl. The employment of new teachers is highly important in this decrease. Based on the year 2016, the provinces where the average number of students per teachers in secondary education are respectively Hakkâri (17), Şırnak (17), Diyarbakır (16) Ağrı (15), Şanlıurfa (15), Gaziantep (15), Van (15) and Muş (15) namely the provinces in Eastern and South Eastern Anatolia. Tunceli (8), Edirne (9), Çanakkale (9), and Artvin (9) provinces are among the provinces with the lowest number of students per teacher in secondary education in 2016.

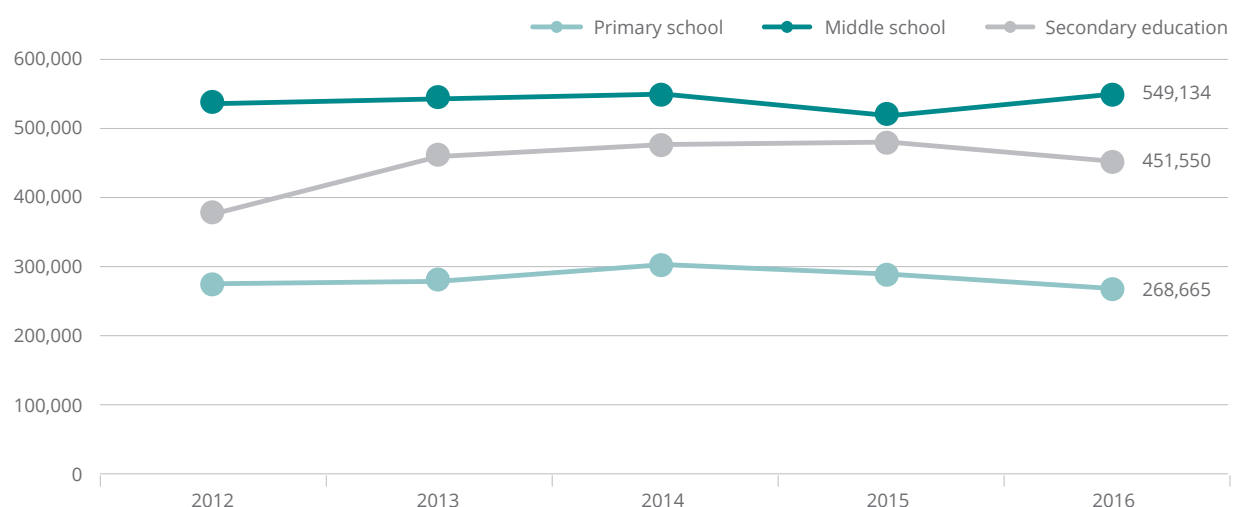
Figure D.3.11 provides the teacher and student rates in OECD countries by level level in 2015. According to this, the average number of students per teacher in OECD countries in 2015 was 15 in primary schools and 13 in middle schools and secondary education. Countries where the rate in question is the highest at the primary school level are Mexico (27), Chile (21), France (19), Czech Republic (19) and Turkey (18). In middle schools, countries where the student-teacher ratio is the highest are Mexico (34), Chile (22) and the third is Turkey with an average of 17. At the secondary education level, the countries with the highest student-teacher ratio are Chile (23), Mexico (20), the Netherlands (18) and Finland (16). Whereas Turkey is among the countries with the highest student-teacher ratio in primary school and middle school, it has a position close to the OECD average in secondary education.

In this indicator, data related to the bussed school practice, which is carried out in order to provide education and teaching to elementary and secondary education students, who have challenges in access to school due to various reasons, by transporting them to school as determined on a daily basis (MONE, 2012). The practice of bussed schools has first been implemented in our country after the second half of the 1989-1990 education and training term for students in scattered/ rural settlement units where the population density is low, in order to ensure equality of opportunities in education and to improve quality in education. In 1998, when elementary education was taken under the scope of mandatory education, as a result of the problems encountered in residential areas with no schools, the field of implementation was enlarged and with the increase of mandatory education to 12 years in 2012, secondary education was also included under the bussed school scope.

MONE transports students at mandatory education age from places where the population is less and more scattered to central schools on a daily basis, ensuring that these students continue their education and learning

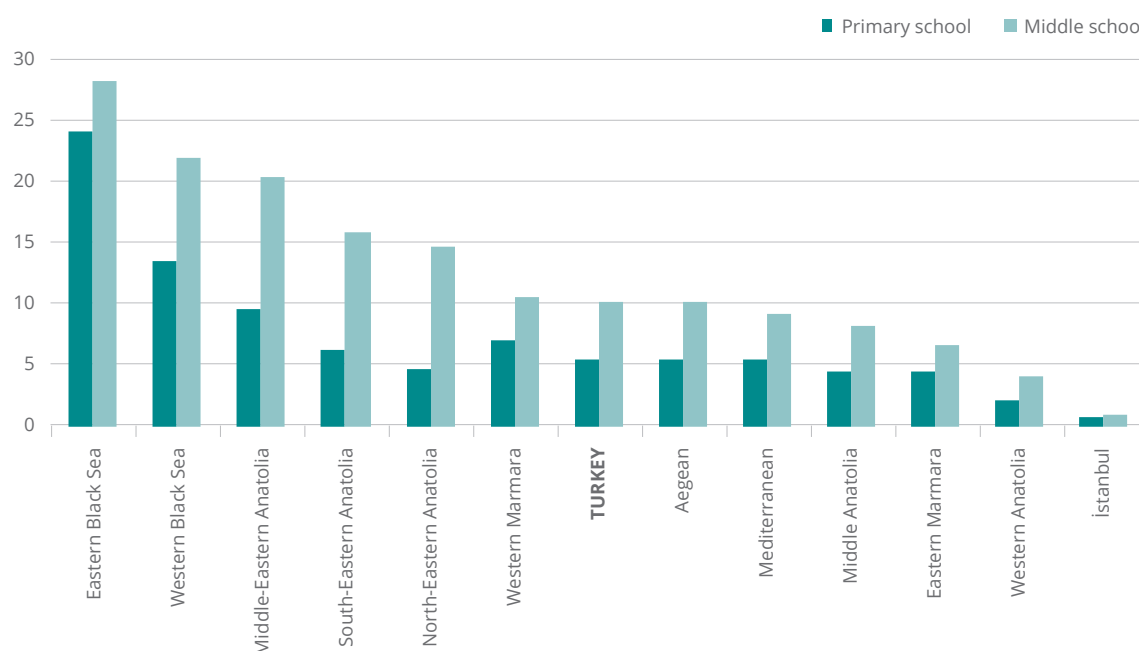
activities. Bussed schools are preferred as they have a lower cost (Eğitim-Bir-Sen, 2016). Bussed schools provide significant advantages in terms of the dissemination of mandatory education practice and in ensuring that girls and children of poor families can access and participate in education (Yurdabakan and Tektaş, 2013). However, it has certain disadvantages as well such as more time spent in accessing school in the long-term thus taking time away from non-course social, cultural and educational activities. In addition to this, particularly in regions where the winter season is harsh, there are certain pedagogical and social disadvantages such as the attendance of students under the scope of bussed school becoming difficult due to road closures from time to time, difficulties for children who leave their homes at very early hours to have regular breakfasts in schools where there is double-shift education, and for that reason they lose motivation for their coursework. However, the necessity that education under the scope of 12-year mandatory education is disseminated to all age groups, the fall in the number of students in schools as a result of long commute time for various reasons, and the necessity to leverage the quality of education, make the bussed school practice mandatory in Turkey (Akyüz,

Figure D.4.1 Change in the number of students who benefit from transportation services by level of education (2012-2016)



Source: Compiled using statistics published by MONE.

Figure D.4.2 Percentage of students who benefit from transportation services by level and region (%) (2016)



Source: Compiled using statistics published by MONE.

2013; Memduhoğlu, 2012). As a conclusion, although the practice of bussed school involves various disadvantages though being an economic and efficient model towards increasing access to education, it also involves various disadvantages. Within this scope, in order to demonstrate the dimension of the transportation education practice in Turkey, the number and rates of students under the scope of bussed schools by level are studied from the perspective of different years and regions.

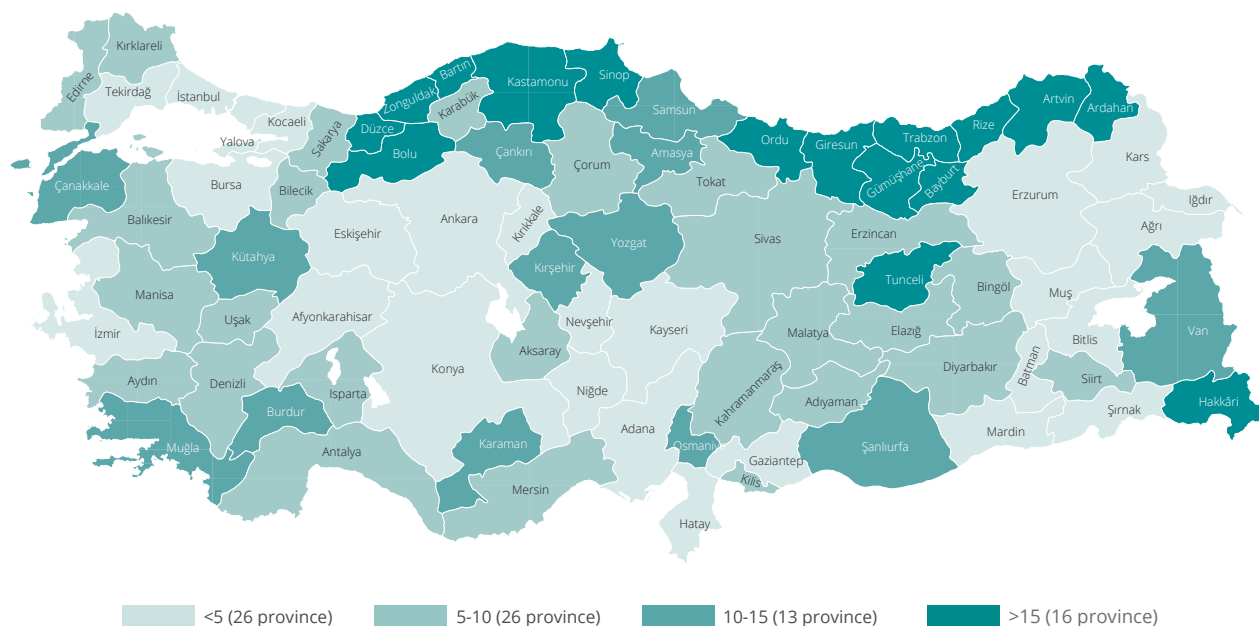
Figure D.4.1 shows the changes in the number of students transported under the scope of bussed schools in different levels between 2012 and 2016. According to this, whereas the number of students under the scope of bussed school was around 274 thousand in 2012 at the primary school level, this number increased to 302 thousand in 2014, and decreased to 268 thousand in 2016. In middle schools, the number of students transported increased from 536 thousand to 549 thousand between 2012-2016. In secondary education, the number of students transported between 2012-2016 increased from 377 thousand to 452 thousand. According to this data, the number of students transported in primary schools is lower compared to middle school and high school. The reason for this is that

due to such practices as combined classes in primary schools, the number of students transported is lower compared to other levels.

Figure D.4.2 provides the rates of students transported under the scope of bussed schools in primary schools and middle schools by region in the 2016-2017 educational term. It can be seen that overall in Turkey, 5.4% of students in primary schools and 10.2% of students in middle schools are being transported to schools in city centers under the scope of bussed schools.

Regions where the bussed school practice is most common at both the primary and secondary level are Eastern Black Sea (Primary school: 24.2%, middle school: 28.2%) and Western Black Sea (Primary school: 13.5%, middle school: 21.9%) In addition to these, Central Eastern Anatolia (primary school 9.5%, middle school: 20.3%), and South-Eastern Anatolia (primary school: 6.3%, middle school: 15.7%) regions where the rural settlement is intense, are the leading regions where the bussed school practice is intensely implemented across education levels. In the North Eastern Anatolia region, whereas the rate of bussed schools at the primary level is under Turkey's average

Map D.4.3 Distribution of the percentage of students who benefit from transportation service in primary school by province (%) (2016)

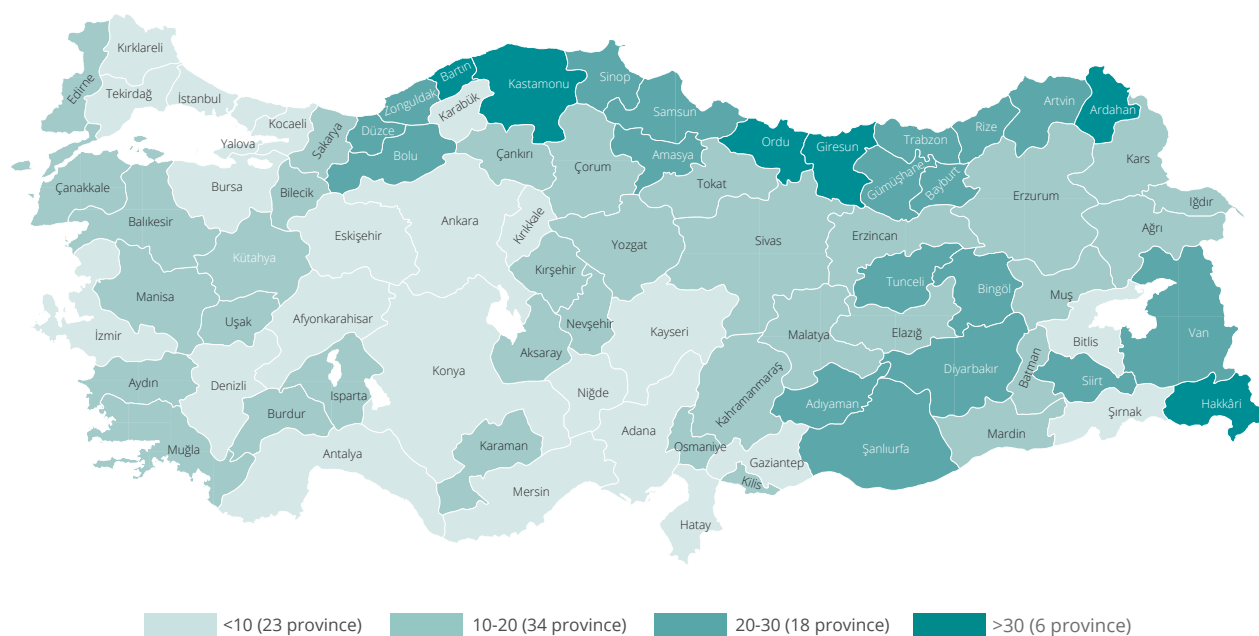


Source: Compiled using \ statistics published by MONE.

with 4.6%, middle schools place above Turkey's average with 14.6%. Regions where the bussed school practice are the lowest in both levels are Istanbul (primary school: 0.7%, middle school: 0.9%) and Western Anatolia (primary

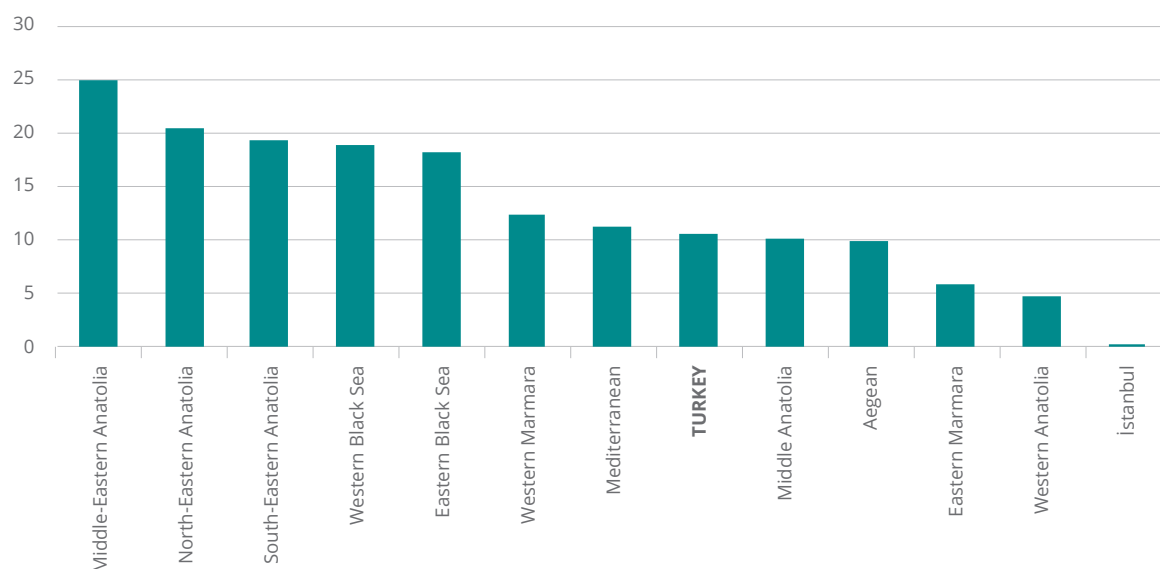
school: 2.1%, middle school: 4.1%). The reason the rate of bussed schools is quite low at both levels is that the population rate is also quite low in rural settlements.

Map D.4.4 Distribution of rates of students who benefit from transportation services in middle school by province (%) (2016)



Source: Compiled using the statistics published by MONE.

Figure D.4.5 Rates of students who benefit from transportation services in secondary education by region (%) (2016)



Source: Compiled using statistics published by MONE.

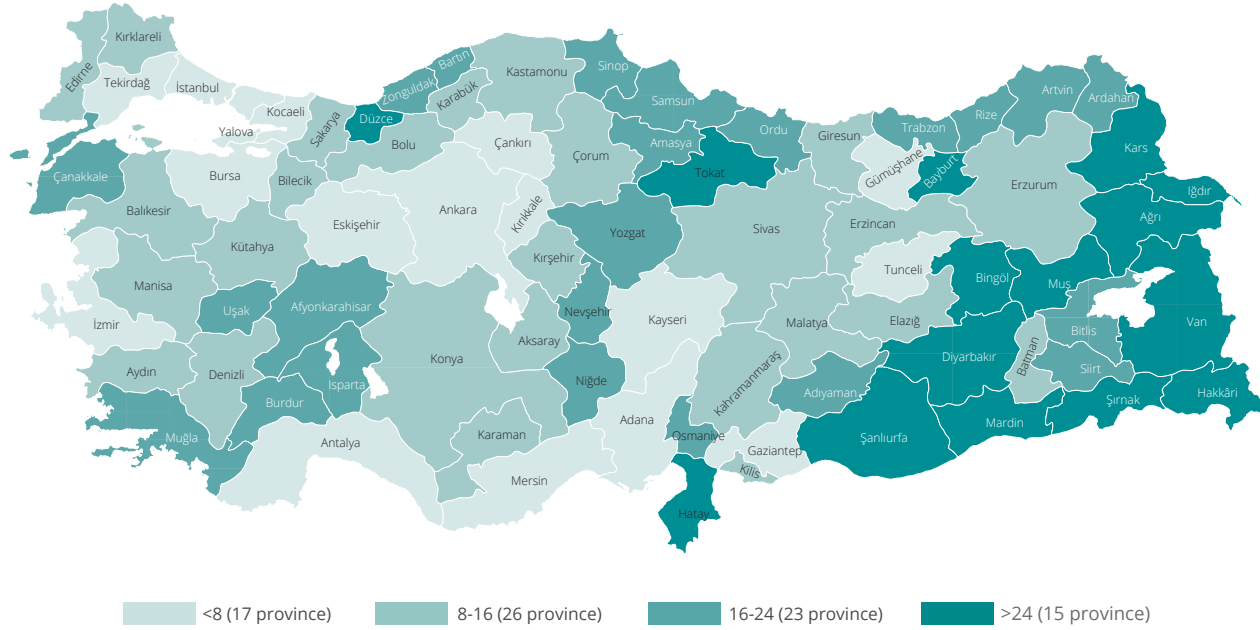
When the rates of students transported under the scope of the bussed school practice in primary schools for the 2016-2017 educational term are examined, it can be seen that the rates of students transported under the scope of bussed schools are intense in the the provinces in Western Black Sea, Eastern Black Sea, Central East Anatolia and South-Eastern Anatolia regions.

(Map D.4.3). Provinces where the rates of students under the scope of bussed school is the highest at the primary level are Bartın (36%), Hakkâri (33%), Giresun (28%), Ardahan (27%) and Ordu (26%). In a total of 16 provinces, most of which are in the West and Eastern Black Sea regions, the rate of bussed schools is over 15%. There are 29 provinces where the rate of bussed school in primary school is under 5.4%, which is Turkey's national average.

When the rates of students transported under the scope of bussed schools in the 2016-2017 educational term

at the secondary level are examined, as in the case of primary schools, it can be seen that the rates of students transported under the scope of bussed schools are high in provinces in the Western Black Sea, Eastern Black Sea, Central Eastern Anatolia and South-Eastern Anatolia regions. Provinces where the students rates under the scope of bussed school are high in secondary school are lead by Bartın and Hakkari, with a high rate of 43%, followed by Kastamonu (33%), Ardahan (33%), Giresun (32%), Ordu (31%) and Van (28%). In a total of 24 provinces, most of which are in the Western and Eastern Black Sea regions, the rate of bussed schools is over 20%. There are a total of 24 provinces where the rate of bussed schools at the secondary level is under 10.2%, which is Turkey average, lead by İstanbul (0.9%) and Ankara (1.7%). According to this, the rate of bussed schools overall in Turkey at the secondary level is 10.7%. When considered from the point of view of regions, Central Eastern Anatolia is the leading region in bussed school rates with 25%.

Map D.4.6 Distribution of rates of students who benefit from transportation services in secondary education by province (%) (2016)



Source: Compiled using statistics published by MONE.

In other words, one in every four high school students in the Central Eastern Anatolia region is transported to a school in the center under the scope of bussed education. Besides the Central Eastern Anatolia, North Eastern Anatolia (20.3%), South Eastern Anatolia (19.2%), Western Black Sea (18.8%) and the Eastern Black (18.2%) regions are higher rate of bussed students at the secondary education. The regions with the lowest proportion of students transported in secondary education are İstanbul (0.3%) and the Western Anatolian (4.9%) regions. Since the population rate in the rural settlement units of Western Anatolia is low, including İstanbul, it is to be expected that the bussed school practice in these regions is low.

When the rates of students transported to schools in the center under the scope of bussed schools in the 2016-2017 educational term at the secondary level are

examined in Map D.4.6, it can be seen that particularly in Central Eastern Anatolia and in the North Eastern Anatolia regions the rate is very high. The leading province where the rate of bussed schools at the secondary level is the highest is Hakkari with 43%. This rate indicates that one in every two high school students in Hakkari is under the scope of transported education.

Provinces where the rate of bussed schools at the secondary level are high following Hakkari are respectively Bingöl (37%), Van (35%), Şırnak (35%), Muş (32%). There are a total of 57 provinces where the rate of bussed schools at the secondary education level is over 10.7%, which is Turkey's national average. İstanbul (0.3%), Yalova (0.7%), Ankara and Eskişehir (1.2%) provinces are the provinces with the lowest rate of bussed schools at the secondary education level.

The impact of such issues as class size and student-teacher ratios on student success is more complex. Indeed the relationship between school environments and the quality and success of education is not necessarily linear (Barber and Mourshed, 2007; OECD, 2017). However, elements such as class size and student-teacher ratios are related to student learning hours, teacher's workloads and the time spent by teachers on teaching and other tasks. These rates are basically related to what is expected from the teacher. Moreover, such indicators relate to the sources currently allocated and to be allocated to education. The fact that the class size is low has positive contributions such as teachers being better equipped for dealing with individual needs of the student and allocating more time to their students. In order to realize learning in a more effective manner, it is important that the students of education-teaching environments are in compliance with different learning objectives, interests, requirements and skills. The data from 2016 related to the number of schools, classrooms and number of divisions, classrooms, and the number of students per teacher, which are considered under this indicator, demonstrates that there have been important developments compared to previous years.

It is particularly important that there has been a significant increase in the number of schools, which is the leading factor for education teaching environments in preschool, elementary education and secondary education levels over the last decade. As a matter of fact, the total number of public and private schools, which was 63,265 in 2006, rose 31% in 2016 to 82,899. Whereas the highest increase in the number of schools by level was in preschools and general high schools with a rate of 40%, the increase in the total number of schools at the elementary education level (primary school + middle school) between 2006 and 2016 was around 25%. In particular there has been a significant increase in the number of private education institutions over the past ten years. Whereas the number of private education institutions in 2006 was 1,474 in total 757 of these were elementary schools, 696 general high schools and 21 vocational high schools, this number reached a total of 5,264 comprising 2,688 primary schools, 2,208 general high schools and 368 vocational high schools.

The number of Imam Hatip schools, which were closed with the uninterrupted education in 1998 and re-opened with the 4+4+4 educational reform in 2012, increased from 1,099 to 2,777 between 2012-2016. The number of Imam Hatip high schools, rose from 493 to 1,408 between 2010-2016. One of the basic reasons for this significant increase observed in Imam Hatip middle schools and Imam Hatip high schools is the abolishment of the coefficient practice in transition to higher education.

Moreover, the diversity of academic secondary education institutions and vocational education institutions has been presented as one of the most fundamental problems in Turkey for many years now (Çelik, 2015). Within this scope, with the work carried out towards decreasing school diversity in secondary education and maintaining the system integrity over program diversity, a significant increase has taken place over the last ten year in the number of science and social sciences high schools. In particular with the transformation of general high schools into Anatolian high schools in

2014 and the closure of the Anatolian teaching high schools, the number of science high schools which was 150 in 2013 increased to 294 in 2016, and the number of social sciences high school increased from 32 to 93 (see Table D.1.2) However, at this point, the work towards decreasing the diversity of schools has remained limited compared to the change of signboards, namely the school names, rather than any structural change in the secondary education system.

In connection with the increase in the number of schools, the total number of classrooms increased from 439,472 to 682,761 and the number of divisions from 529,702 to 765,119 between 2006 and 2016. That is, the total number of classrooms in Turkey in the last ten years increased by 55% and the number of divisions increased by 44% (see Table D.1.3). The increase in the number of students in all levels in the same period was around 16% (See Indicator A.2). The fact that the increase in the number of classrooms is quite higher than the number of students is important in the sense that it demonstrates that the number of schools providing double-shift education decreased. Furthermore, after 2009, it has been adopted as a basic policy to increase preschool education (Çelik, 2011). As a result of this policy, the number of classrooms which was 33,213 in 2006, increased to 70,104 in 2016. By including secondary education under the scope of mandatory education with the 4+4+4 education reform, the number of classrooms and divisions in secondary education rapidly increased and rose from 98,748 to 189,783 between 2006-2016 (See Table D.1.3) When considered from the point of view of high school types, there has been a rapid increase compared to general high schools in the number of classrooms and divisions in vocational high schools after 2011. Whereas the total number of classrooms in general high schools was 69,882 in 2011, this increased to 88,885 in 2016. In the same period, the number of classrooms in vocational high schools increased from 52,032 to 100,898 (See Table D.1.4). Out of 197,567 classrooms constructed between 2006 and 2016, 113,056 were allocated to elementary schools and 16,398 to secondary schools (See Table D.1.5). In reports prepared under European Union and World Bank projects which were implemented in the early 2000s, it was recommended as a basic policy target to construct new schools and classrooms in order to increase schooling, and to improve the infrastructure of schools. As a matter of fact, in various government programs, development plans and various documents prepared by MONE in Turkey, it was indicated that it was necessary to construct new schools in order to increase schooling rates (Çelik and Gür, 2013). As a result of these policies, the resources allocated to education increased significantly in the recent period and as it was indicated in Indicator A, the schooling rates demonstrated a significant increase over time across all levels.

Double-shift education has been ongoing in some regions in Turkey. The government which wants to overcome the problem of double-shift education, expressed that it aims to terminate double-shift education by the end of 2019 in the Middle Term Plan that covers 2017-2019 (Ministry of Development, 2016). However, in order to end the double-shift education system, 60 thousand new classrooms are needed, namely 2,500 schools with 24 classrooms (Eğitim-Bir-Sen, 2016b). This demonstrates that an emphasis will be put on constructing schools in the coming years.

As a natural result of the increase in the number of schools and new classrooms, a significant decrease has occurred in the number of students per division and classroom. According to this, the number of students per division both in elementary education and secondary education between

1990 and 2016 decreased significantly and declined from 34 to 23 in elementary education and from 42 to 18 in secondary education. The number of students per classroom in elementary education decreased from 35 to 24 and in secondary education from 31 to 22 between 2005-2016 (See Figure D.2.1). Furthermore, in primary schools under the scope of elementary education, whereas the number students per division in elementary school was 22 in 2012, this number increased to 21 in 2016. The average number of students per division in the last five year period in middle schools, decreased from 27 to 25 (See Figure D.2.3). In secondary education, the number of students per division in general high schools was 46 in 1990, and this number decreased to 21 in 2016. The number of students per division in vocational high schools decreased from 37 to 16 between 1990-2016 (Figure D.2.4). Taking into account the fact that the OECD average is 21 in primary schools and 23 in middle schools within the context of the average number of students per division (OECD, 2017), it can be seen that Turkey has caught up with the OECD average in primary schools and approached the OECD average in middle schools, but still remains above the OECD average. This demonstrates that there is still a need for more classrooms in Turkey.

Despite the fact that there was a significant increase in the number of schools in elementary education, no important change took place in the number of students per school. Whereas the number of students per school in 2012 was 192 in primary schools, 306 in middle schools, the number of students per school in 2016 was 195 in primary schools and 302 in middle schools (See figure D.2.5). Between 2012-2016, the number of students per school in general high schools in secondary education decreased from 464 to 377, and the number of students in vocational high schools increased from 326 to 419 (Figure D.2.6) The basic reason for the increase of the number of students per school in vocational high schools is the conversion of vocational high schools with different names sharing the same campus into one single school with the school transformations in 2014 and the consequent increase in the number of students in vocational education.

Despite the fact that both the number of students per school and the number of students per classroom and division decreased at a significant level in terms of Turkey's national average, the differences between regions still persists at a significant ratio. The number of students per division in primary schools, middle schools and high schools in all regions decreased. However, the problem of excessive difference between regions in the number of students per division still persists. In primary schools, according to 2016 data, the number of students per division is 27 in Istanbul, 22 in Eastern Marmara, 14 in North-Eastern Anatolia and 17 in the Western Black Sea region. Whereas the number of students per division in secondary schools was 29 in the South Eastern Anatolia Region and 28 in Istanbul, it was 20 in the Eastern Black Sea and 21 in the Western Black Sea regions in 2016. In high schools, whereas this ratio was 21 in Istanbul and 20 in Eastern Marmara, it was 16 in the Eastern Black Sea, 17 in the Western Black Sea regions (See Figure D.2.7, Figure D.2.8, Figure D.2.9). When analyzed on the basis of provinces, the number of students per division decreased almost in all levels and in all provinces over time. However, excessive differences between provinces continues just as in the case of different regions. Whereas the rate of students per division in primary school was 27 in Istanbul, 25 in Gaziantep, 24 in Kocaeli, and 23 in Sirnak, Tekirdag, Bursa and Sanliurfa with the highest rates, the number of students per division in primary schools in Kars, Erzurum, Ardahan, Bitlis and Tunceli provinces was lowest with 13. When the year 2016 is taken as a basis, the average number of students per division in middle schools, was the highest in Şanlıurfa

and Diyarbakır (30), Gaziantep (29), İstanbul, Siirt, Mardin and Şırnak'ta (28), and it is the lowest in Tunceli (15), Artvin (17), Bayburt, Gümüşhane, Bartın, and Rize'de (18). When the year 2016 is taken as a basis, the average number of students per division in high schools was 21 in Batman, 22 in Kilis, Bursa and Kocaeli, 21 in Gaziantep, Eskişehir and İstanbul, it was 9 in Tunceli and 12 in Ardahan (See Figure D.2.13, Figure D.2.14, Figure D.2.15)

The number of students per school differs significantly between the regions. Whereas in primary schools the number of students per school is 595 in İstanbul, 267 in Western Anatolia, it is 78 in North-Eastern Anatolia and 12 in Central East Anatolia. In middle schools, the number of students per school is 597 in İstanbul and 176 in the Eastern Black Sea region. Whereas the number of students per school is 497 in South Eastern Anatolia and 496 in İstanbul in secondary education, it is the lowest with 297 in the Western Black Sea region and 295 in the Eastern Black Sea region (See Figure D.2.10, Figure D.2.11 and Figure D.2.12). The basic reason for the fact that the number of students per school in other regions than İstanbul is low arises from the existence of schools with low number of students particularly in the rural areas in these regions and the fact that education is being provided in combined classes with low numbers of students in primary schools. Since teachers from several divisions are needed at the middle school and high school level, students are being transported to more central places than the places where the number of students is low. Another issue is that the leading factors that affect the large sizes of schools in İstanbul are the existence of schools with big physical structures with a higher rate of double-shift education.

There have been significant decreases in the number of students per teacher. Between 1990 and 2016, the number of students per teacher in elementary education generally showed a declining trend, decreasing from 25 to 17. In secondary education, the rate of students per teacher between 1990-2016 was 12 (See Figure D.3.1). However, the rate of students per teacher in secondary education had a fluctuated trend over the years. With the increase of the high school period from three years to four years, this number increased after 2008 and with the high number of teachers assigned after 2011, the number of students per teacher decreased. Even despite the inclusion of high schools into the scope of mandatory education after 2012 and the rapid increase in the number of students, the number of students per teacher decreased as a result of assigning a high number of teachers. In other words, around 330 thousand new teachers were assigned between 2010-2016 (See Figure C.2.6). In 2012, elementary education was separated as 4+4 and restricted accordingly. When the number of students per teacher in primary schools and middle schools after 2012 is analyzed, the rates decreased from 20 to 17 in primary schools and from 19 to 16 in middle schools between 2012-2016 (See Figure D.3.3). In secondary education, when the number of students per teacher in general high school and vocational high schools is analyzed, the number of students per teacher, which was 12 in both types of schools in 1990, increased to 18 with a fluctuating trend until 2010. The number of students per teacher between 2010-2016 was 13 in general high schools and 12 in vocational high schools with a decline in both types of high schools (See Figure D.3.4). When we analyze private schools, the number of students per teacher between 1990 and 2016 decreased from 47 to 9 in elementary schools, and increased from 5 to 9 in high schools (see Figure D.3.2). When it is analyzed how the number of students per teacher changed in OECD countries by level, it can be seen that the number of students per teacher in Turkey in primary schools, middle schools and high schools was higher than the OECD average. The average

number of students per teacher in OECD countries in 2015 was 15 in primary schools and 13 in middle schools and secondary education. Despite the fact that the number of students per teacher decreased over the years in Turkey, the number of students per teacher in primary school (18) and middle school (17) levels approached the OECD average, and it is among the countries where the number is the highest. In secondary education, it can be seen that the number of students per teacher (14) in Turkey approaches OECD averages (See D.3.11). As previously discussed, the fact that the number of students per teacher is low does not have a direct impact on the success of education. However, it does mean that a teacher could potentially allocate more time to a student (OECD, 2017). Even in such countries as Korea, Japan and Singapore, which are the most successful countries in PISA and TIMSS, the number of students per teacher is higher than the OECD country average. For that reason, it is emphasized that the indicator of a quality education is not the number of students but the quality of the teachers (Barber and Mourshed, 2007).

As in the case of the number of students per division, the number of students per teacher changes by region and province. In addition to this, the number of students per teacher decreased significantly over time in all regions and in almost every province. Between 2012-2016, the number of students per teacher decreased at the elementary school level in all provinces other than Bayburt and in all regions. In 2016, the number of students per teacher in primary school was 21 in İstanbul and South Eastern Anatolia, 13 in the Western Black Sea, and 14 in Eastern Black Sea and Aegean regions (See Figure D.3.5). When compared with regions, the number of students per teacher between provinces changes more in primary school. In 2016, the average number of students per teacher in primary school was 23 in Şanlıurfa and Şırnak, 21 in Gaziantep and İstanbul, 20 in Kilis and Diyarbakır, 11 in Kırşehir and Tunceli (See Figure D.3.8).

The number of students per teacher in middle schools between 2012-2016 decreased in all regions and in all provinces except Yozgat and Artvin. However, the excessive difference between regions and provinces is on going. When regions are analyzed, although the number of students per teacher in middle schools was 21 in İstanbul and 20 in South-Eastern Anatolia in 2016, this was 12 in the Eastern Black Sea, 13 in the Western Black Sea regions and 14 in the Aegean (See Figure D.3.6) When the year 2016 is taken as a basis, the average number of students per teacher in middle schools was 21 in Şanlıurfa, Şırnak and İstanbul, 20 in Gaziantep, Hakkari, Van and Ağrı, 9 in Tunceli, and 11 in Burdur, Kırşehir, Erzincan, Amasya and Gümüşhane (See Figure D.3.9). In high schools, between 2011-2016, in all regions and in all provinces other than Hakkari and Bingöl, the number of students per teacher decreased, however the difference between regions and provinces continued to be significant. The number of students per teacher at the high school level was 15 in South Eastern Anatolia and 14 in İstanbul, it was 11 in the Southern Black Sea, West Marmara, East Anatolia and Aegean regions (See Figure D.3.7). When the year 2006 is taken as a basis, the average number of students per teacher in secondary education was the highest with 17 in Hakkari and Şırnak, 16 in Diyarbakır, 15 in Şanlıurfa, Gaziantep, Van and Muş. Tunceli (8), Edirne, Çanakkale, and Artvin (9) provinces (Figure D.3.10) are among the provinces with the lowest number of students per teacher in secondary education in 2016. Briefly, whereas the number of students per teacher decreased over time for all levels in all regions and almost in all provinces, the inequality between regions is ongoing in a significant manner.

The basic purpose of bussed schools which first started to be implemented after 1989-1990, was to ensure that students at the elementary education age who are in settlements units with a low and scattered population, are transported on a daily basis to elementary education institutions in selected centers and educated and taught accordingly (MONE, 1994). All of the primary schools, middle schools and high schools were included after the 2011-2012 educational year to the bussed school practices, which first started in elementary schools (Aytan, Güney, Şahin and Bayar, 2014). The number of students transported under the scope of bussed schools between 2012-2016 decreased from 274 thousand to 269 thousand in primary schools, and increased from 536 thousand to 549 thousand in middle schools, and from 377 thousand to 452 thousand in high schools. According to this data, the number of students transported in primary schools is lower compared to middle school and high school. The reason for this is that due to such practices as combined classes in primary schools, the number of students transported is lower compared to other levels. Overall in Turkey, 5.4% of students in primary schools and 10.2% of students in middle schools are being transported to schools in city centers under the scope of transported education. Regions where the bussed school practice is carried out at the highest level at both the primary and middle school level are the Eastern Black Sea (primary school 24.1%, middle school 28.2%) and Western Black Sea regions (primary school 13.5%, middle school 21.9%). In addition to these, Central Eastern Anatolia (primary school 9.5%, middle school 20.3%), and South Eastern Anatolia (primary school 6.3%, middle school 15.7%) where the rural settlements numbers are high, are leading as the regions where bussed schools are highly common across different education levels. In North Eastern Anatolia, whereas the rate of bussed schools in primary schools are under Turkey's national average with 4.6%, the rate for middle schools is above Turkey's national average with 14.6% in. Regions where the bussed school practice is the lowest in both education levels are İstanbul (primary school 0.7%, middle school 0.9%) and Western Anatolia (primary school 2.1%, middle school 4.1%) (See Figure D.4.2) The reason the bussed school practice is quite low in both levels is that the population rate is quite low in the rural settlements.

It is observed that the provinces where the rates of students who are transported under the scope of bussed schools for the 2016-2017 educational term are the highest in Western Black Sea, Eastern Black Sea, Central East Anatolia and South-Eastern Anatolia (See Map D.4.3) Provinces where the rates of students under the scope of bussed schools is the highest in primary school are Bartın (36%), Hakkâri (33%), Giresun (28%), Ardahan (27%) and Ordu (26%), and a significant majority of the provinces are in the Western and Eastern Black Sea regions. The average of bussed school overall in Turkey at the secondary education level is 10.7%. When analyzed from a regional perspective, the transportation rate of high school students is 25% in Central Eastern Anatolia, 20.3% in North Eastern Anatolia, 19.2% in South Eastern Anatolia, 18.8% in the Western Black Sea and 18.2% in the Eastern Black Sea regions. The bussed school practice is performed more due to the fact that the rural population is scattered and high in these regions. The region where the rate of students transported under the scope of bussed schools is the least at the secondary level is İstanbul with a rate of 0.3% (See Figure D.4.5) In Western Anatolia regions, including İstanbul as the first, the lower the rural population, the lower the rate of students transported under the scope of transported education is. When analyzed from a provincial perspective, the rate of high school students transported under the scope of transported education, was 43% in Hakkari, 37% in Bingöl, 35% in Van and Şırnak and 32% in Muş. On the other hand, this rate is less than 1% in İstanbul and Yalova (See Figure D.4.6).

- In general, there have been significant developments in enriching the capacity of education and teaching environments in the education system, as well as the physical and human capacities. These developments are important for creating the infrastructure required for a quality education system. Together with this, the failure of practices that would increase the quality of education to comply with quantitative developments create a challenging situation. What Turkey needs primarily at this point is, in addition to increasing the number of schools and classrooms, to develop and implement policies towards improving the quality of education in schools.
- The number of students per division has highly decreased in recent years and although it is above the OECD average in all levels, it is approaching this average. However, the class sizes change significantly by region and province. This demonstrates that there is a significant inequality in terms of the distribution of resources in the Turkish education system. Therefore, emphasis should be put on disadvantageous regions and provinces in constructing new schools and classrooms, thus decreasing the inequalities between regions and provinces.
- The number of students per teacher has significantly decreased in all levels over the years and approached the OECD averages. However, the basic problem here is that the number of students per teacher excessively differ between regions and provinces. Therefore, emphasis should be put on disadvantageous regions in teacher assignments in order to provide equality between regions and provinces. In addition to this, various incentives such as bonuses, lodging etc. should be provided in order to ensure that teachers assigned to the disadvantageous regions will stay there for longer periods of time.
- The transported education practice, which has been implemented in order to resolve the problem of access to education, continues to bear certain problems. In particular, there are various problems such as children leaving their homes at very early hours in schools with double-shift education without having breakfasts on a regular basis and thus they are not motivated in their courses. For this, particularly in schools which perform transported education, full day education should be carried out rather than double-shift education. In addition to this, further attention should be paid to ensuring that instead of transporting children of a young age, teachers should be transported to where the students live, because, problems caused by bussed schools affect young children more.

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CHAPTER



FINANCING

INDICATOR E1	Budget Allocated to Education
INDICATOR E2	Expenditure Per Student
INDICATOR E3	Budget Distribution by Economic Classification
INDICATOR E4	Education and Teaching Support
CHAPTER E	Highlights
CHAPTER E	Recommendations

There is a strong relationship between education and socio-economic development. Research demonstrates that there is a high level relationship between an individual's education level and their income in many different countries (Acemoğlu and Angrist, 1999). Moreover, as the education level of individuals increases, the economic growth speed of a country also increases (Hanushek and Kimko, 2000; Psacharopoulos and Patrinos, 2002). In addition to the economic benefits of education, there are also various social benefits that also increase wealth. For example, it is well known that an increase in education level also has an effect on decreasing such problems as crime rates, child mortality rates and social inequalities (Schultz, 1994).

Due to the economic and social benefits of education, many countries increase the periods of mandatory education in order for their citizens to receive longer education, and to try to disseminate education to different layers of the society (Eğitim-Bir-Sen, 2016). Furthermore, the view that not only the quantity of education but also its quality plays a significant role in social and economic development. The importance that is placed on international assessment exams such as the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), relates to the accepted strong connection between student success and economic development. Research conducted demonstrates that there is a strong relationship between a country's economic development level and the success of students (Hanushek and Kimko, 2000; Barro, 2001; Hanushek and Wößmann, 2007).

As a result, countries try to provide longer and higher quality education to their citizens in order to both develop social welfare and also increase their international competitiveness. This makes the financing of education even harder in countries where the schooling rates are traditionally low but are growing rapidly, such as Turkey. Both the continuous increase in the number of students and the increase in expenditures per student require the public resources allocated to education to be increased. Within this scope, it is necessary to regularly monitor and evaluate the public resources allocated to education. Within the framework of this requirement, this part deals with the education expenditures made from the public budget and the change in these expenditures over years. Together with this, the amount of expenditures per student on the basis of different educational stages is examined in detail.

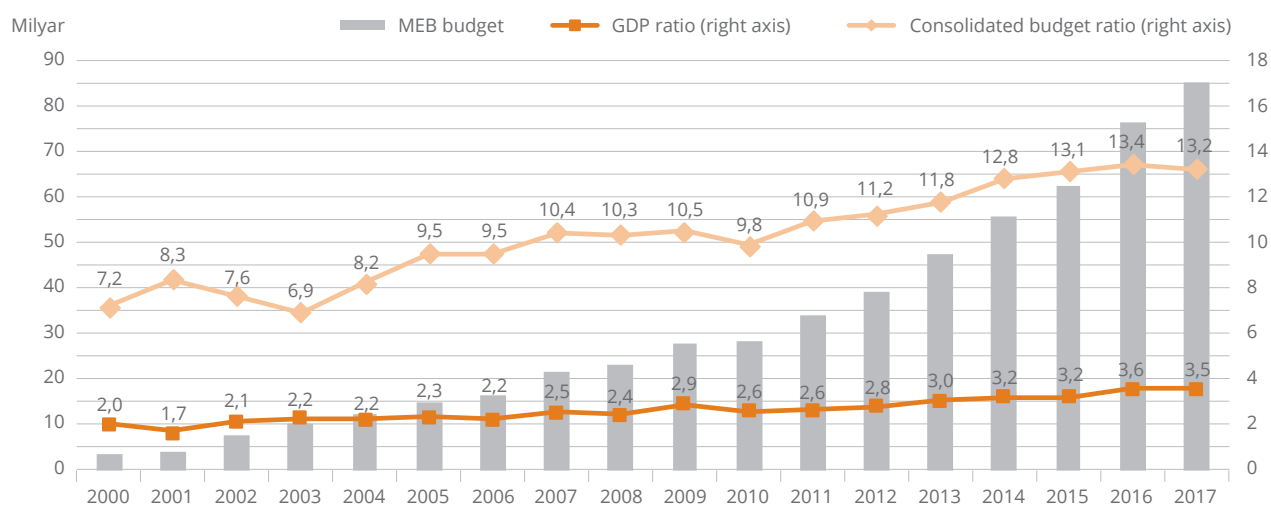
Education is defined as a fundamental right and a public service. For this reason, countries allocate a significant amount of resources to education. The size of resources allocated to education is very important. This part deals with the ratio allocated to education from the Gross Domestic Product (GDP) and central administration budget, as well as how these rates differ among regions and education levels.

Figure E.1.1 shows the change over the years in the share of public financing allocated to education, namely the budget of the Ministry of National Education (MONE), within the GDP and the consolidated budget. When the 17-year period from 2000 up until now is analyzed, it can be seen

that the budget allocated to MONE has been continuously increasing, rising from 3.3 billion TL to 85 billion TL.

The increase in the general budget and the important growth that the Turkish economy has accomplished in the last 15-years have had an important effect on this increase. Together with this, it is seen that there has been a significant increase in the portion of the budget allocated to MONE to the general budget during this period. This rate, which was 7.2% in 2000, almost doubled in 2017 reaching 13.2%. That means, Turkey allocates almost 13% of the central budget to education expenditures without including higher education.

Figure E.1.1 Trends in MONE's total budget and the portion this budget represents of the GDP and consolidated / central administration budget (2000-2017)



Source: Compiled by Eğitim-Bir-Sen (2016) using National Education Statistics published in various years and updated by the authors.
Note: Excluding higher education budget.

Similar to the increase in the share of budget allocated to MONE within the general budget, the portion of the GDP allocated to the MONE budget has also significantly increased over the last 17 years. This rate, which was around 2% in 2000, reached 3.5% in 2017 with an increase of 80%. All this numerical information demonstrates that has been a significant increase in the public resources allocated to education in the last 17 years both in terms of the amount and in terms of the proportion of the general budget and the GDP. This situation is closely

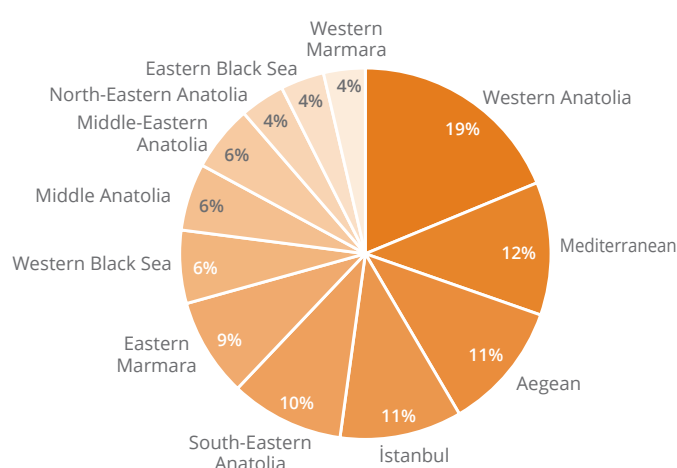
related to the increase in the number of students who participate in education, and the particularly the extension of the mandatory education periods. Meanwhile, efforts to increase the physical and technological infrastructure in order to increase the quality of education, are another important reason for the increase in the budget allocated to education.

Figure E.1.2 shows the proportional distribution by region of the central administration budget according to

the functional classification of education services. It can be seen that this distribution is generally in compliance with the population density of the regions and the total number of students. Within this scope, it can be seen that the highest share per region in the functional classification of education services of the central administration budget

is allocated to the Western Anatolia region, with an approximate rate of 19%. Western Anatolia is followed by the Mediterranean (11.6%), Aegean (11.2%) and Istanbul (1.6%), and the lowest share is allocated to the Western Marmara (3.6%), Eastern Black Sea (3.8%) and North Eastern Anatolia (3.9%) regions.

Figure E.1.2 Proportional distribution of the central administration budget according to education services and functional classification by region (2016)

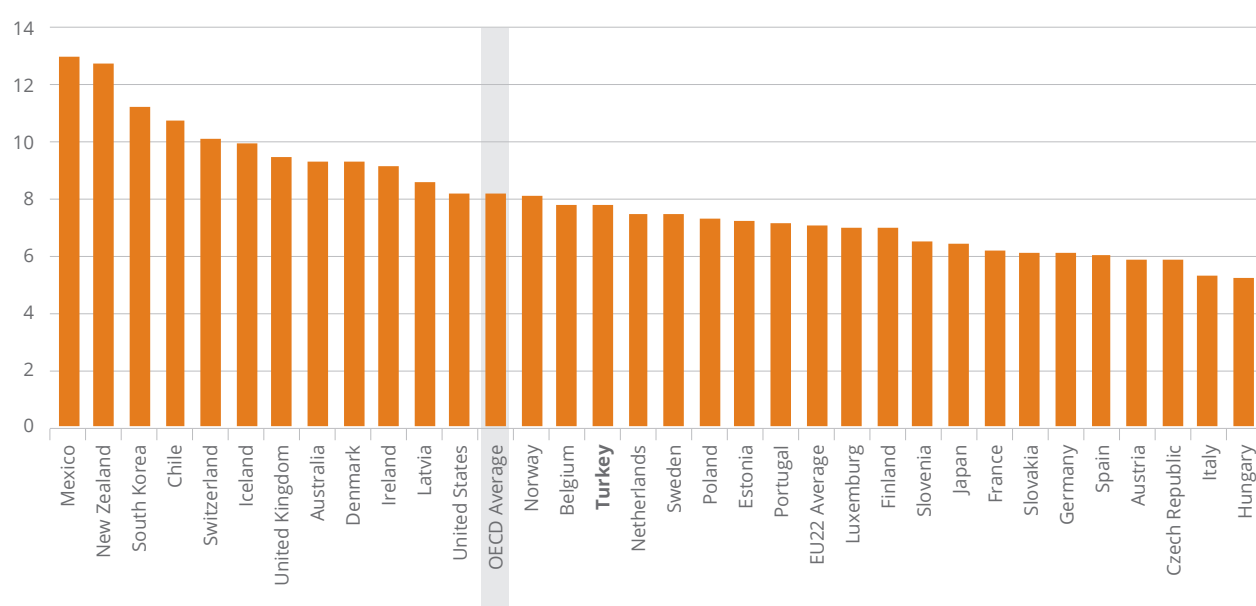


Source: Ministry of Finance (2016)
 Note: Covers the expenditures made under education services functional classification within the central administration budget expenditures on the basis of different provinces for 2016. It includes higher education expenditures.

The central budget allocated to education in Turkey in the recent years has significantly increased. However, in order to understand the current status better, it is necessary to analyze the budget allocation to education comparatively with other developed countries of the world. Figure E.1.3 demonstrates expenditure on educational institutions as a percentage of GDP in Organization of Economic Cooperation and Development (OECD).

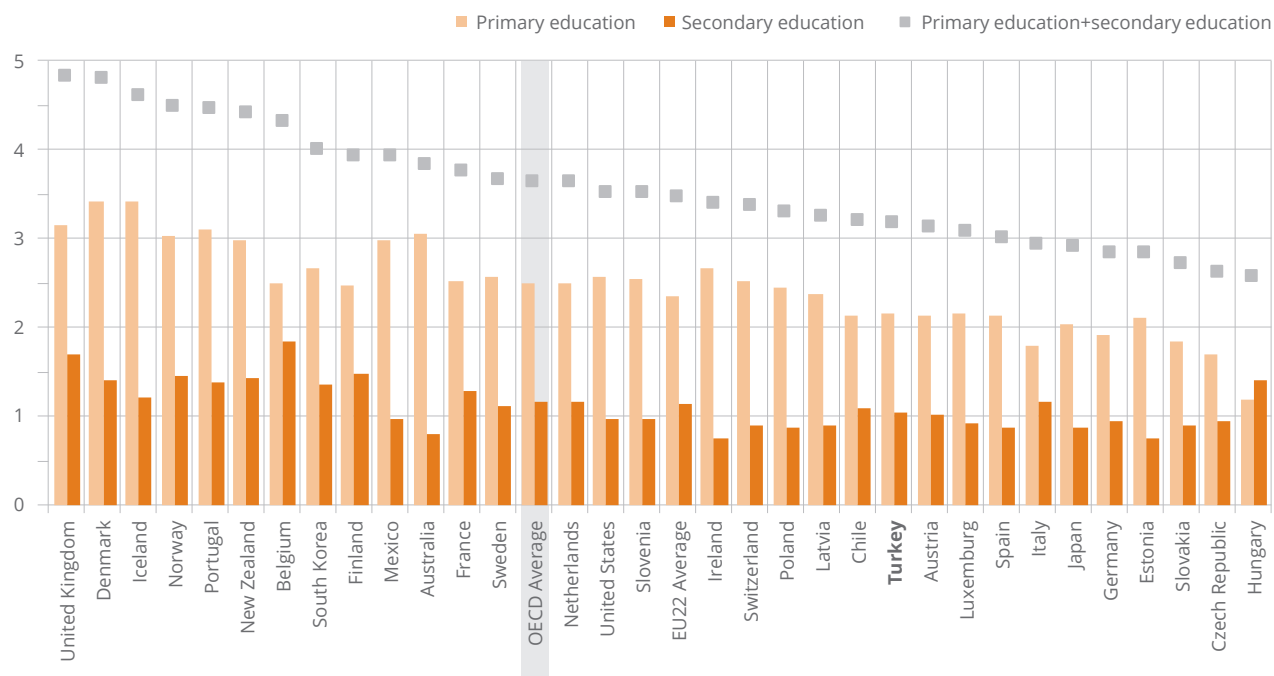
According to this, Turkey remains under the OECD average in terms of share allocated to education from the central budget. According to 2014 data, Turkey has allocated 7.8% to education from the general budget, and remained under the OECD average of 8.2%. Leading countries are Mexico (13.0%), New Zealand (12.7%), South Korea (11.2%) and Chile (10.7%). Some of the OECD countries where this rate is lower than Turkey are the Netherlands (7.5%), Sweden (7.4%), Poland (7.3%), Estonia (7.2%) and Portugal (7.1%). Furthermore, it can be seen that big economies such as Japan (6.4%), France (6.2%) and Germany (6.1%) are at the lower ranks of the list.

Figure E.1.3 Expenditures on educational institutions as a percentage of the GDP in OECD countries (2014)



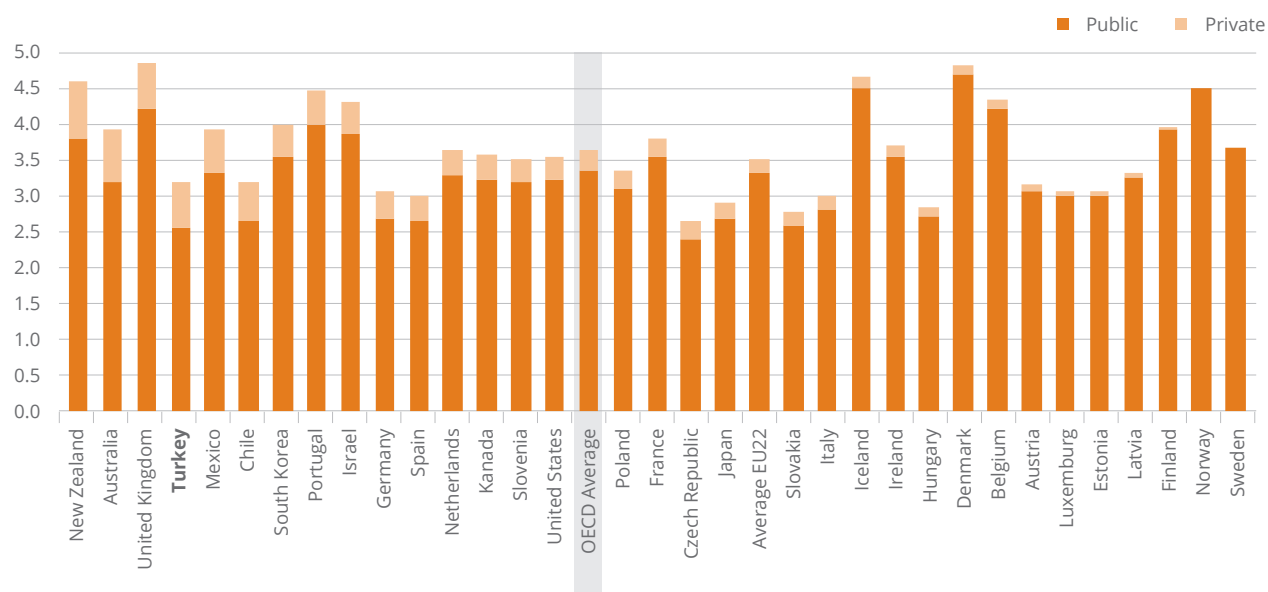
Source: OECD (2017)
 Note: Excluding higher education.

Figure E.1.4 Expenditures on educational institutions as a percentage of the GDP, by level of education in OECD countries (2014)



Source: OECD (2017)
Note: Excluding higher education.

Figure E.1.5 Public and private expenditures on educational institutions as a percentage of the GDP, according to all levels of education in OECD countries (2014)



Source: OECD (2017)
Note: Excluding higher education.

Figure E.1.4 demonstrates expenditures on educational institutions as a percentage of the GDP, by level of education in OECD countries. According to 2014 data, this ratio is 3.2% in Turkey, and the OECD country average

is 3.6%. Namely, the situation is similar to that shown in Figure E.1.3. Although Turkey is below the OECD average, it has a rate that is relatively close to the average. However, Turkey, which is 15th among OECD countries in terms of

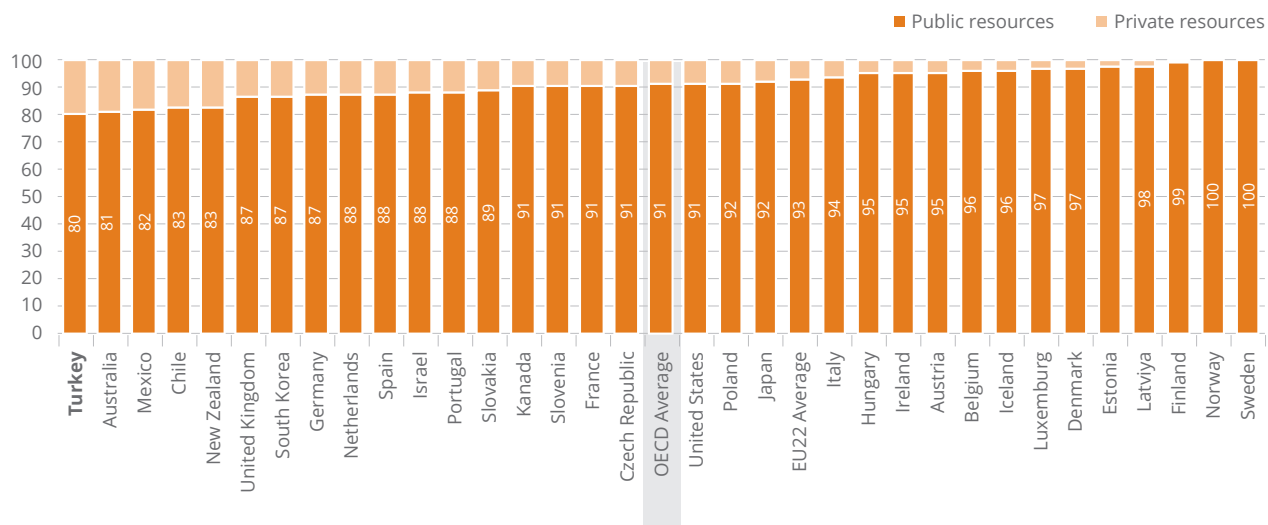
the share of the budget allocated to education from the general budget, it has fallen back to 22th in terms of the rate of education expenditures according to the GDP. The three countries with the highest rate of total education expenditures according to the GDP are respectively the United Kingdom (4.8%), Denmark (4.8%) and Iceland (4.6%), and the countries where this rate is the lowest are Hungary (2.6%), Czech Republic (2.6%) and Slovakia (2.7%).

Figure E.1.5 demonstrates the Public and private expenditure on educational institutions as a percentage of the GDP, according to all level of education in OECD countries. According to Figure E.1.5, the OECD average of the share of public expenditures from GDP is 3.35%. It can be seen that the countries where this rate is the highest are Denmark (4.68%), Norway (4.51%) and Iceland (4.49%). With 2.56%, Turkey is among the few countries with the

lowest rate of public expenditures proportionately to the GDP. When the rate of private expenditures comparatively to the GDP is analyzed, it can be seen that OECD average is around 0.3%. Countries where this rate is the highest are respectively New Zealand (0.79%), Australia (0.72%) and the United Kingdom (0.62%). Turkey is the 4th country with the highest rate of private expenditures according to the GDP, following United Kingdom, with a rate of 0.62% .

Figure E.1.6 shows the share of private expenditures allocated to educational institutions in OECD countries. As it can be seen from the figure, Turkey is the country with the highest rate of private expenditures within total expenditures towards education. In Turkey, 20% of the total expenditures on education comprise private expenditures.

Figure E.1.6 Share of private expenditures on educational institutions in OECD countries (2014)



Source: OECD (2017)
Note: Excluding higher education.

The OECD average of the rate of private expenditures compared to the total expenditures is around 9%. When this information is evaluated together with Figure E.1.5, it can be seen that the rate of total public expenditures on education in Turkey according to the GDP needs to be leveraged. Moreover, when compared with the data of previous years, it can be seen that private expenditures on education in Turkey have had an increase trend.

According to the data from 2012, the rate of private expenditures according to total education expenditures

in Turkey was around 16%, and in 2 years, this rate increased to 20% (Eğitim-Bir-Sen, 2016). It is estimated that this increase was affected by the increase in the number of students who continued in private schools with the emergence of basic high schools. Furthermore, with the implementation of TEOG in addition to the university entrance exam preparation courses, all students began to prepare for high school entrance exams and the rates of students enrolled in high schools who used school buses increased, which increased private expenditures.

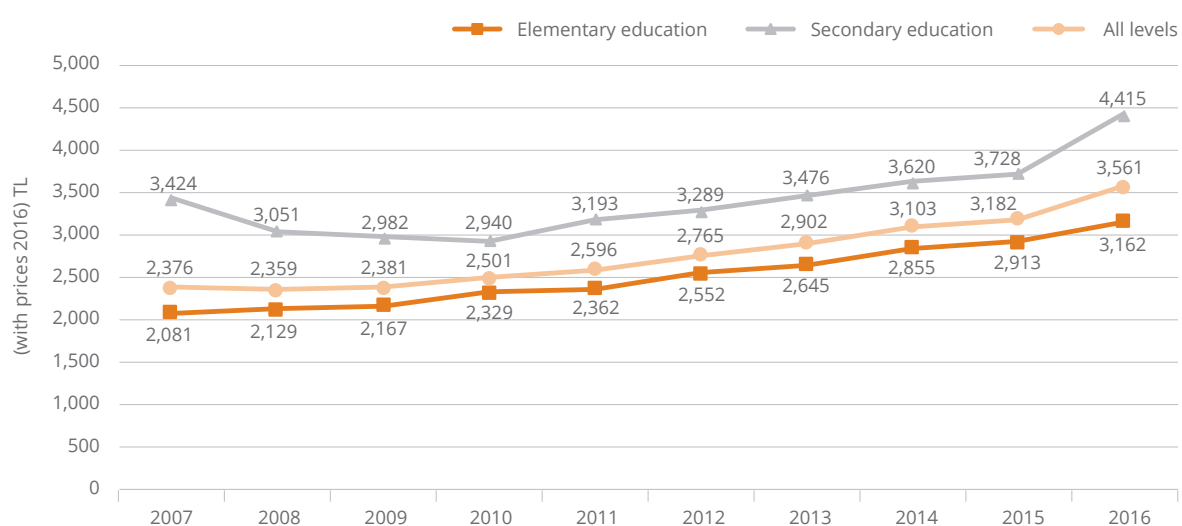
The amount of private or public resources allocated by country to education and the share of these resources within total expenditures are among the most important indicators of the expenditures made towards education. However, important differences can be seen in the number of students as a result of the young population rates in countries. From this point of view, the amount of expenditures made per student is accepted as an important indicator in terms of the financing of education. It is expected that in such countries as Turkey, where the young population is rapidly increasing and also the schooling rates are increasing, that the total expenditure to education increases. However, it may not be possible to increase at a constant rate, or even to maintain a fixed level or to maintain the amount of expenditure per student due to the rapid increase in the number of students.

Figure E.2.1 demonstrates the change over the years in the number of public expenditures per student by level. According to this, it can be said that, when the public expenditures per student over the last ten years in Turkey are analyzed, the results seem quite positive. Despite the

significant increase in the number of students, the general increase trend in expenditures per student has continued across all educational levels.

As it can be seen from Figure E.2.1, the expenditure per student for all levels in 2017 was 2,376 TL in 2016 prices, and this expenditure increased to 2,765 TL in 2012 and 3,561 TL in 2016. When the elementary level is analyzed, an increase trend similar to that in general education can be seen. The amount of expenditure per student, which was 2,081 TL in 2007, increased to 2,552 TL in 2012, and to 3,162 in 2016. When looking at the secondary education level, it can be seen that there was a partial decrease in the expenditures per student between 2007 and 2010. The expenditures per student, which was 3,424 TL in 2007, showed a three-year decline trend, after which it was 2,940 TL in 2010, and then subsequently, entered into an increase trend again, reaching 3,476 TL in 2013 and 4,415 TL in 2016. The reason for this temporary situation could be the extension of high schools to four years as of the 2005-2006 educational term, and the increase in the number of students at the secondary education level.

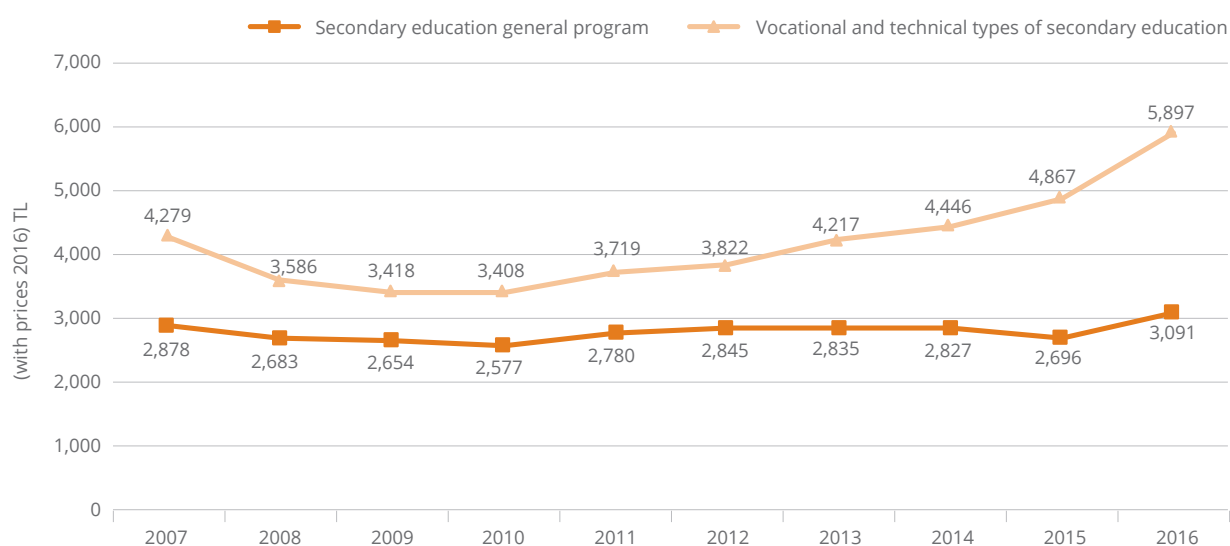
Figure E.2.1 Trends in the expenditures per student by level (TL) (2007-2016)



Source: Compiled using statistics published by MONE in various years and 2016 statistics from the Ministry of Finance. Fixed prices of December 2016 are taken as basis for the calculations.

Note: Elementary education covers preschool, primary school and middle school

Figure E.2.2 Trends in the expenditures per student by type of secondary education (TL) (2007-2016)



Source: Compiled using statistics published by MONE in various years and 2016 statistics from the Ministry of Finance. Fixed prices from December 2016 are taken as basis for the calculations.

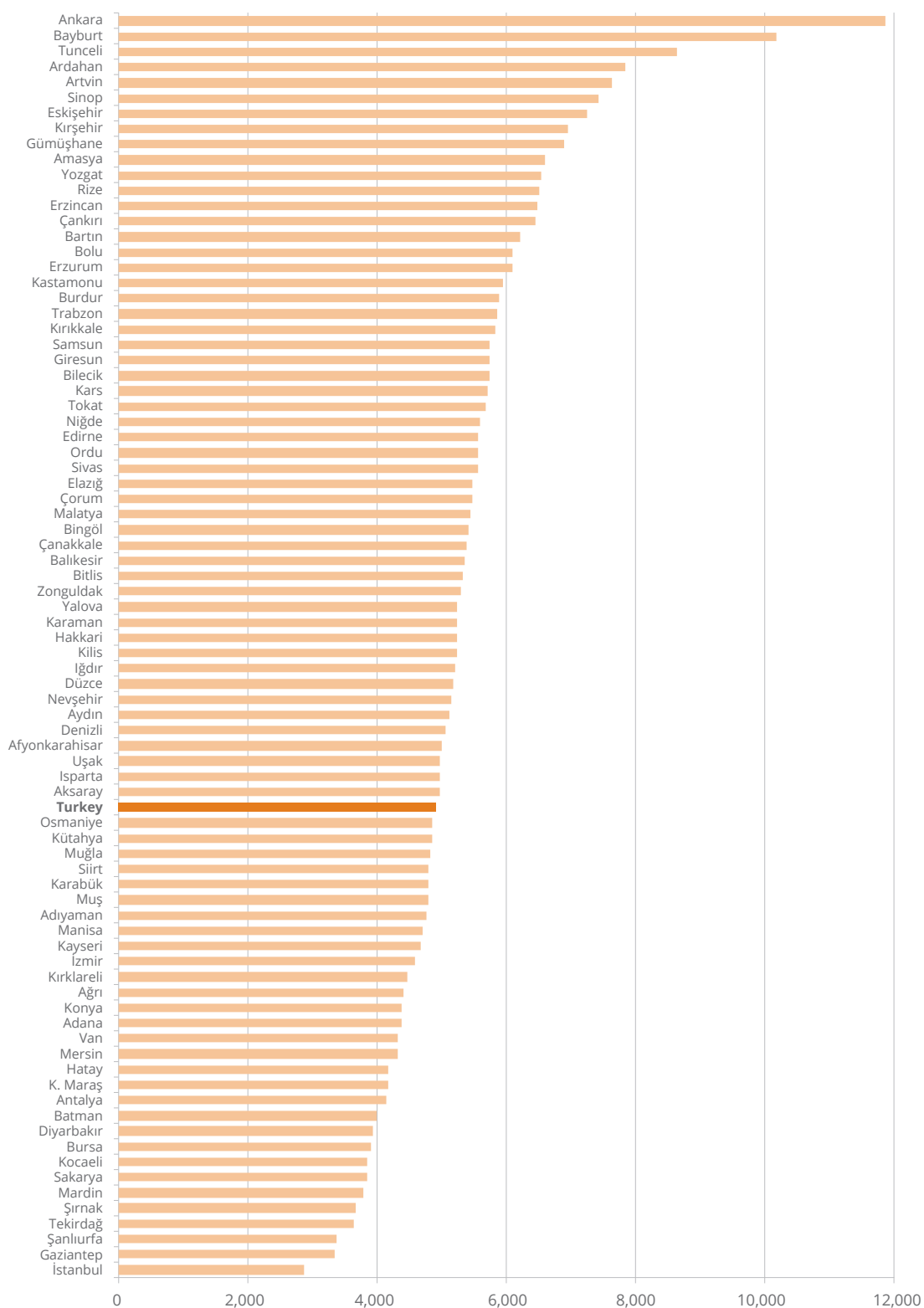
However, it can be seen that public expenditures were made compliant with the new situation in a fast manner and that the increase of expenditures per student again engaged in an increase trend.

Figure E.2.2 Changes in expenditures per student according to type of secondary education between 2007-2016. According to this, there has been a decrease in the expenditure per student both in vocational and technical secondary education and general secondary education between 2007-2010. This decrease arises from the fact that, despite the increase in significant amounts in the number of students continuing secondary education in the specified period, the total budget allocated to education has not yet been increased by the same amount. It can be seen that the decrease in expenditures per student is higher in vocational and technical education. The reason for this is the fact that the increase in the number of

students engaged in vocational and technical secondary education between 2007-2010 is higher compared to the increase in the number of students in other secondary education types (Eğitim-Bir-Sen, 2016).

The decrease trend in expenditures per student in vocational and technical education between 2007-2010 was reversed after 2010. The amount of expenditures per student, which was 4,279 TL in 2007, was 3,408 TL in 2010 and 5,897 TL in 2016. As opposed to this fluctuating trend in vocational and technical education there was no significant change over time in the expenditures per student in other secondary education institutions, and the expenditure per student in general secondary education was 2,878 TL in 2007, which increased to 3,091 in 2016. Another point that attracts attention when the data from the last ten years is analyzed is that the expenditure per student for vocational and technical secondary education institutions is higher

Figure E.2.3 Expenditures per student in all levels including higher education by province (TL) (2016)



Source: Compiled using Higher Education Information Management System, MONE statistics and the 2016 statistics of the Ministry of Finance.

Note: This is found by dividing the expenditures made under Education Services functional classification in the central administration budget expenditures on the basis of provinces for 2016, by the total number of students in the province. This covers all education levels. The number of students in open education in higher education was excluded.

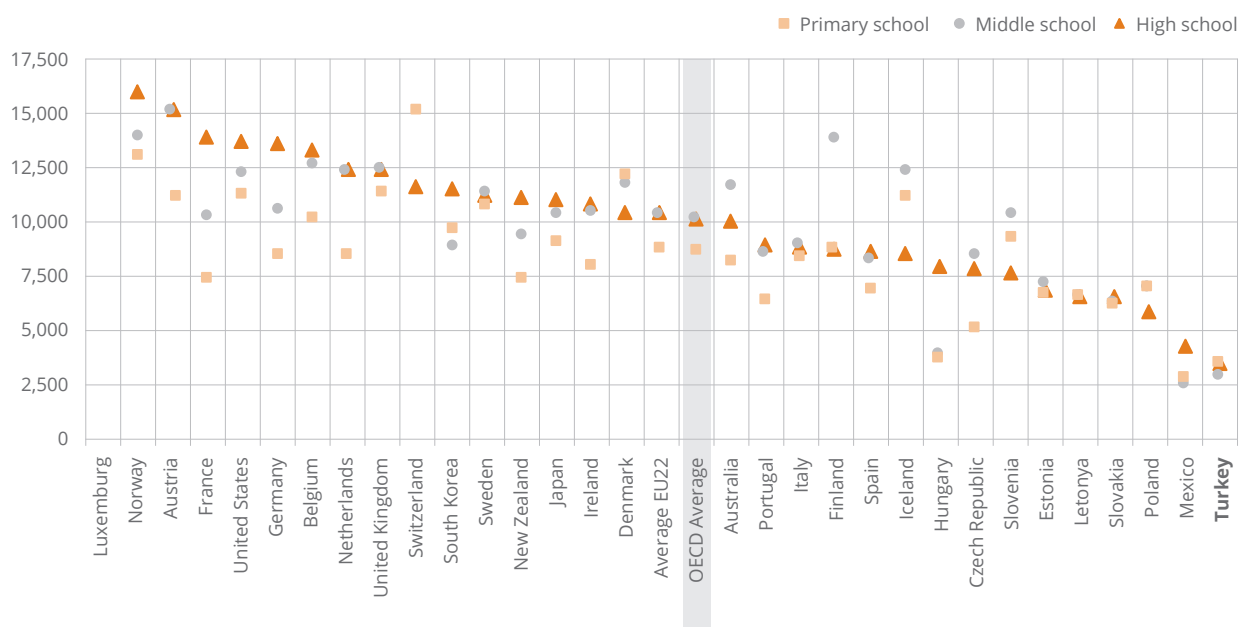
compared to other secondary education institutions. It can be seen that in the last three years, the difference between vocational and technical secondary education institutions and other secondary education institutions increased more.

Figure E.2.3 shows the expenditures per student in all levels in 2016 by province (including higher education). As it can be seen from the figure, there are significant differences between provinces in terms of expenditures per student. The average spending per student overall in Turkey for all education levels is 4,907 TL. However, this figure decreases down to 2,878 TL in Istanbul where the expenditures per student are the lowest, and increased to 11,860 TL in Ankara where the spending per student is the highest. The fact that the amount of expenditure per student in a big city like Ankara is so high, can be explained by the fact that the central organization of MONE is in Ankara and the expenditures of the central organization are included in the expenditures in Ankara (Eğitim-Bir-Sen, 2016). However, it can be seen that there are also provinces other than Ankara where the expenditures per student is at quite a high level. For example, the amount of expenditures per student in Bayburt, Tunceli, Ardahan,

Artvin and Sinop provinces are respectively 10,176 TL, 8,648 TL, 7,827 TL, 7,622 TL and 7,433 TL.

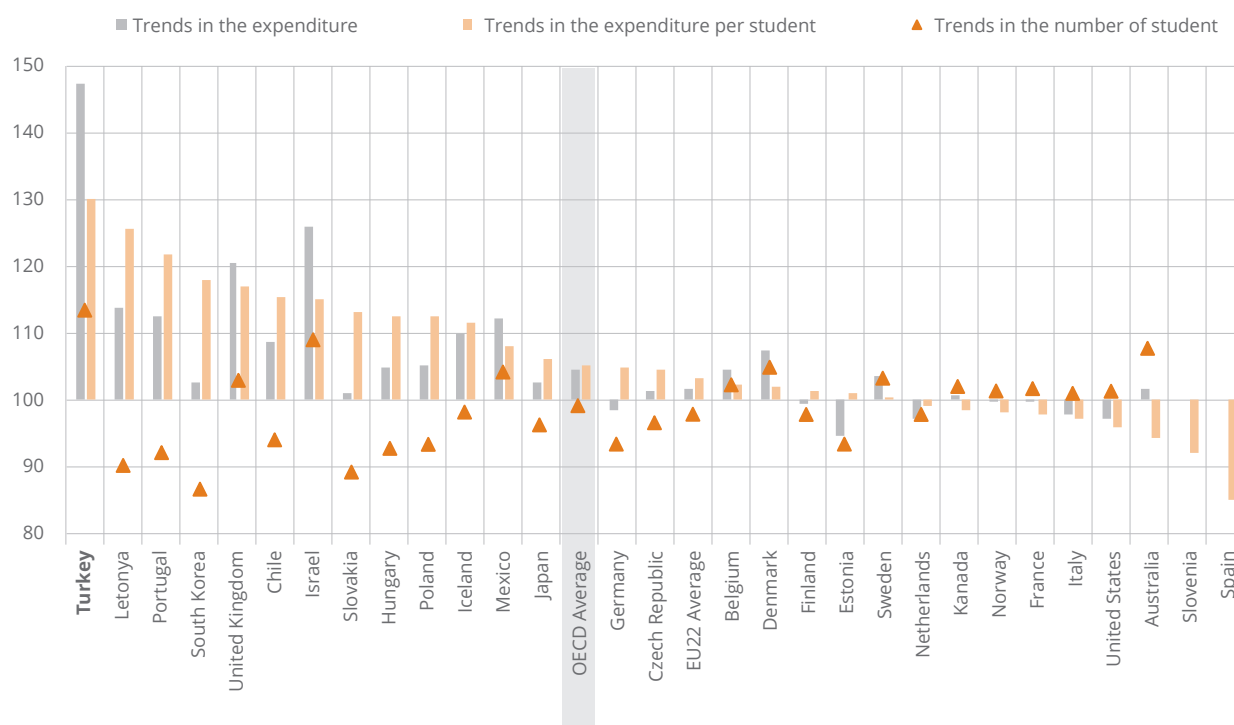
It can be seen that provinces where the expenditures per student are above Turkey's average are the ones with lower populations. Therefore, the fact that the number of students per teacher in these provinces is low can be shown as the main source of this situation. However, expenditures per student in some provinces such as Eskişehir, Erzurum, Malatya, Trabzon, Samsun and Balkesir where the population is relatively high, are above Turkey's average. When looking at provinces where the expenditure per student is below the Turkish average, provinces such as İstanbul, Gaziantep, Şanlıurfa, Tekirdağ, Mardin, Sakarya, Kocaeli, Bursa and Diyarbakır, which receive migration and have a denser population are featured. However, expenditures per student in some provinces such as Şırnak, Batman, Ağrı and Muş, which have a relatively lower population, remain below the Turkish average. Provinces where expenditures per student are at a lower level despite the lower population density are located in Eastern Anatolia and South Eastern Anatolia regions.

Figure E.2.4 Annual expenditures per student by educational institutions for all services, by level of education in OECD countries (\$) (2014)



Source: OECD (2017)

Figure E.2.5 Trends in the number of students, expenditures and expenditures per student in OECD countries in elementary education and secondary education (2010-2014)



Source: OECD (2017)
Note: 2010=100, fixed price

Figure E.2.4 demonstrates the amount of expenditures per student in OECD countries in 2014. As it can be seen from the figure, Turkey is at the last rank in terms of expenditure per student among all OECD countries at the high school level. It could only pass Mexico with a slight difference in terms of expenditures per student at the primary school and middle school levels.

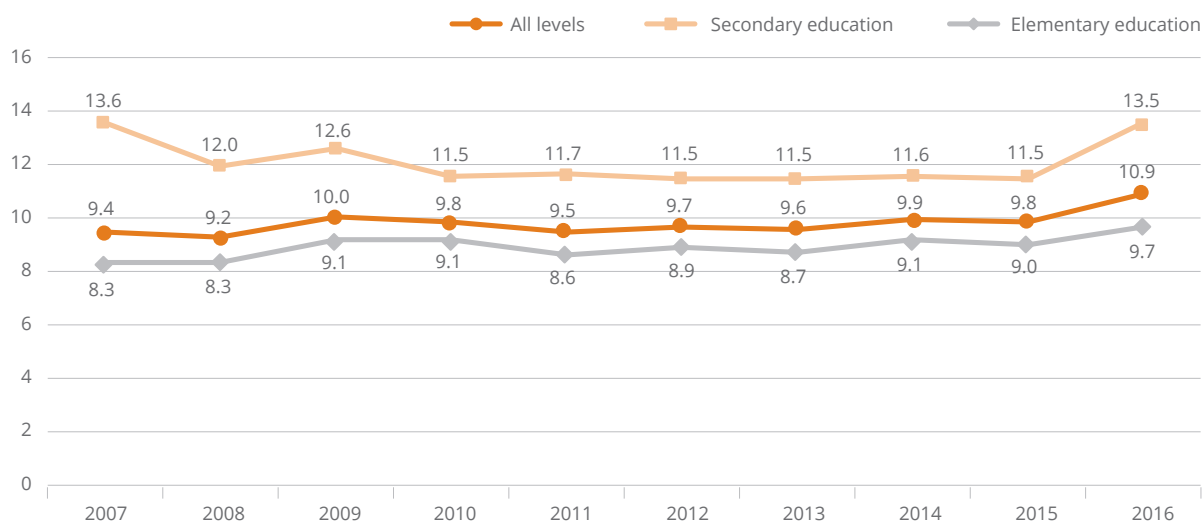
Whereas the OECD averages of expenditures per student in primary school, middle school and high school levels are respectively 8,733\$, 10,235\$ and 10,182\$, the expenditure per student in Turkey for the same levels are 3,589\$, 2,953\$ and 3,570\$.

Figure E.2.5 shows the change in the number of students, education expenditures and expenditures per student in

different countries in elementary and secondary education between 2010 and 2014. As it can be seen from the figure, Turkey is at the first rank among all OECD countries both in terms of total expenditures and the of expenditures per student, and the increase in the number of students.

Whereas there was a decrease of 1% in the number of students overall in OECD countries during the period in question, there was an increase of 4% in the total expenditures towards education. The increase in the OECD average in the expenditure per student was around 5%. When the change in Turkey during the same period is analyzed, it can be seen that there was an increase of 13% in the number of students, 47% in total expenditures and 30% in expenditures per student. This data demonstrates that Turkey has accomplished a good development speed

Figure E.2.6 Trends in the rate of national income per capita compared to current prices and expenditures per student (%) (2007-2016)



Source: Compiled using MONE statistics and GDP data published by TUIK in various years and 2016 statistics from the Ministry of Finance.

Note: Expenditures in TL per student in a specific year are divided into per capita national income over current prices in TL of that year (per capita national income over current prices calculated with mid-year population obtained using Address Based Population Registry System annual results) and multiplied by 100 for the convenience of interpretation.

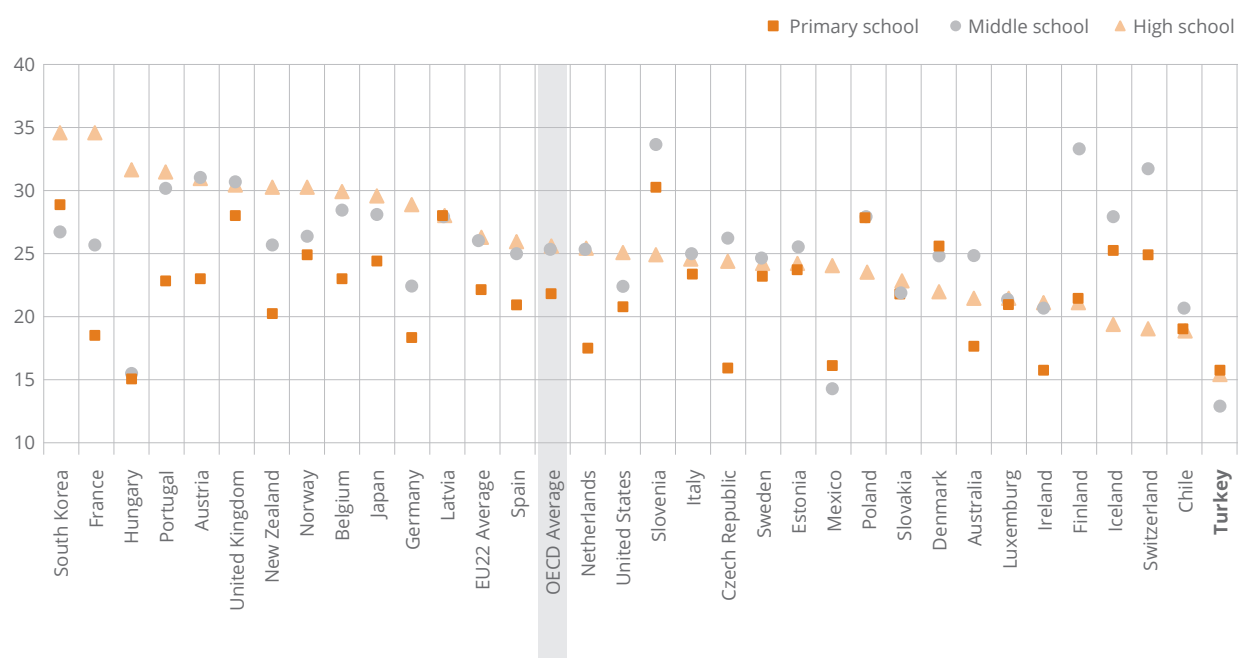
in terms of increase in expenditures towards education in recent years. In particular, in an environment where the student number has significantly increased, the increase in the expenditures per student at the same rate is a great success.

Figure E.2.6 demonstrates the change in the rate of expenditure per student in Turkey between 2007-2016 by per capita national income. According to this, the rate of expenditures per student in the last ten years according to national income has generally had a relative increase. For all levels, the expenditure per student in 2007 corresponded

to 9.4% of the per capita national income, and this rate was 9.7% in 2012 and 9.8% in 2015. Rates of 8.3%, 8.9% and 9% respectively that have occurred over the same years in elementary education point to a similar trend.

However, the rate of expenditures per student to per capita national income between 2007-2010 at the secondary education level had a significant decrease, declining from 13.6% to 11.5%. In the following years, this rate remained virtually at the same level, and was 11.5% in 2015. In the last one year, there was a significant increase to 13.5%. In general, in all levels, the rates of expenditures per student

Figure E.2.7 Rate of expenditure per student to per capita income by level of education in OECD countries (2014)



Source: OECD (2017)

to per capita national income has significantly increased over the last year.

Figure E.2.7 demonstrates the rate of expenditures per student to per capita income by level in OECD countries in 2014. As it can clearly be seen in the figure, Turkey is far beyond OECD countries in terms of the rate of expenditure per student to per capita income in Turkey.

Whereas OECD averages for primary school, middle school and high school levels are respectively 21.7%, 25.1% and 25.4%, Turkey is the second last after Mexico among all OECD countries with a rate of 15.5% in primary level, and at the bottom of the list with rates of 12.7% and 15.4% at the middle school and high school level.

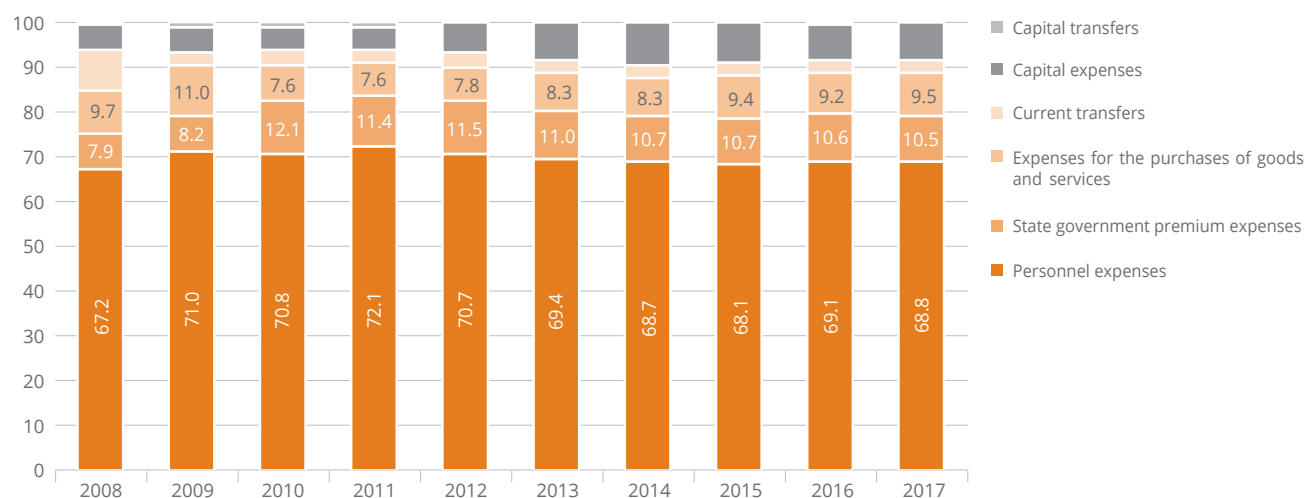
In general, budget shares allocated to education can be examined under three main headings, namely the investment/capital expenditures involving such expenditures as the construction of buildings and machinery/ vehicle procurement, current expenditures involving expenditures such as employee salaries, illumination-water charges and procurement of services, and the transfer of expenditures which comprises the transfer of monetary resources to certain institutions (Eğitim-Bir-Sen, 2016). This sections deals with the issue of budget distribution by economic classification.

When Figure E.3.1 is examined, it can be seen that the largest portion of expenditures from the MONE budget is allocated to staff expenditures. Whereas staff expenditures demonstrated an overall increase trend between 2008-

2011, there was a relative decrease after 2011. Whereas the the rate of staff expenses within the MONE budget was 67% in 2008, this rate reached 72% in 2011.

As of 2011, the rate of staff expenses within the total MONE budget is around 69%. It can be seen that capital expenses which comprise such items as the construction of new classrooms, big repairs or procurement of manufactured goods showed a decrease trend between 2008-2011, and then engaged in an increase trend after 2011. The capital expenditures which were at a level of 5.5% in 2008, declined back to 5% in 2011. In the following three years, it demonstrated a rapid increase, reaching 9% in 2014. As of 2017, the rate of capital expenditures from the total MONE budget was at a rate of 8.5%. It is thought that the rapid increase in capital expenditures particularly

Figure E.3.1 Trends in the distribution of the MONE budget by economic classification (2008-2017)



Source: Compiled by Eğitim-Bir-Sen (2016) using National Education Statistics published in various years was updated by the authors.

between 2011-2014 relates to the new classrooms and schools constructed after the 4+4+4 regulation as well as the expenditures made under the scope of the FATİH Project (Eğitim-Bir-Sen, 2016).

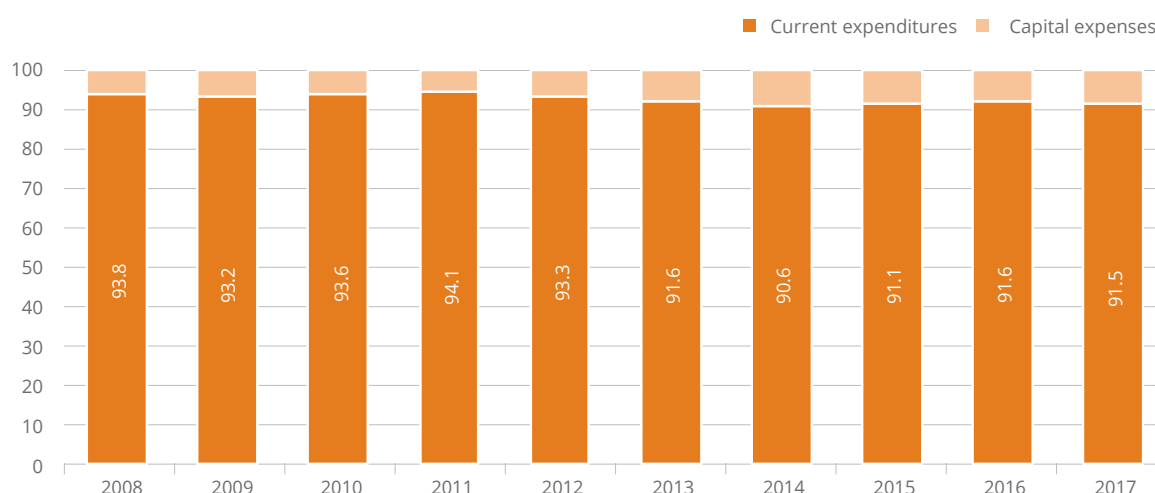
An important expenditure item in the MONE budget is the procurement of goods and services. Rates of expenditures made for the procurement of goods and services within the total MONE budget demonstrates slight increases in some years, but generally changes between 8-10%. This

rate was at 9.7% in 2008, 7.8% in 2012 and 9.5% in 2017. It can be said that there is generally an increase trend since a rate of above 9% occurred continuously in the last three years. Finally, when the transfer of expenditures which constitutes a smaller part of the MONE budget are examined, it is revealed that there is an overall decline trend. Rates of capital transfers comprising budgets allocated to universities co-established by Turkey abroad

(e.g. Kirgizstan Manas University), to the total MONE budget have also changed significantly over the years. This rate, which was around 0.6% in 2008, increased to 1% in 2009-2011, and decrease further in 2017 to 0.02%.

The rate of current transfers which cover transfers to non-profit organizations, transfer to households, payments to students receiving scholarships from the state and

Figure E.3.2 Trends in the distribution of current and capital (investment) costs in the MONE budget (2008-2017)



Source: Compiled by Eğitim-Bir-Sen (2016) using National Education Statistics published in various years and updated by the authors.

governments and similar expenditures, proportionate to the MONE budget, had a significant decrease in 2009, and continued at the same level after that.

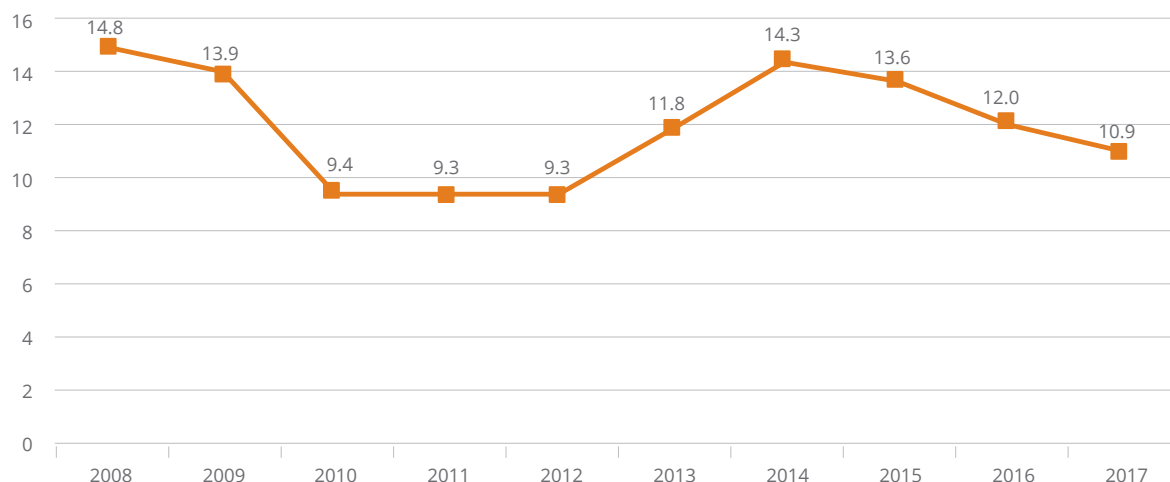
Figure E.3.2 demonstrates the proportional distribution within the MONE budget of current and capital expenditures between 2008-2017. As it can be seen, the current expenditures constitute a big portion of the MONE budget. The share of current expenditures in the MONE budget has continuously been above 90% between 2008-2017. This rate, which was at 93.8% in 2008, had the highest value of the last ten years with 94.1% in 2011, and after that it engaged in a decrease trend and reached the lowest point of 90.6% in 2014. This rate was around 91% over the last three years. This increase in the share of current expenditures in the MONE budget until 2011 can be explained by the assignment of a high number of

teachers between these years and therefore the increase in staff expenditures.

After 2011, in particular with the capital expenditures made under the scope of the 4+4+4 amendment and FATİH project, may have led to the decrease of current expenditures in proportional terms. Namely, it can be said that MONE has increased capital expenditures in proportional terms for the last couple of years.

Figure E.3.3 shows the change in the investment share allocated to MONE in the consolidated budget investments between 2008-2017. The share allocated to MONE from the consolidated budget in 2008 is 14.8%. In 2012, this rate decreased to 9.3%. Following the 4+4+4 education reform, it can be seen that there was a significant increase in the share allocated to MONE from the consolidated

Figure E.3.3 Trends in the share allocated to MONE investments from consolidated budget investments (%) (2008-2017)



Source: Compiled by Eğitim-Bir-Sen (2016) using National Education Statistics published in various years and updated by the authors.

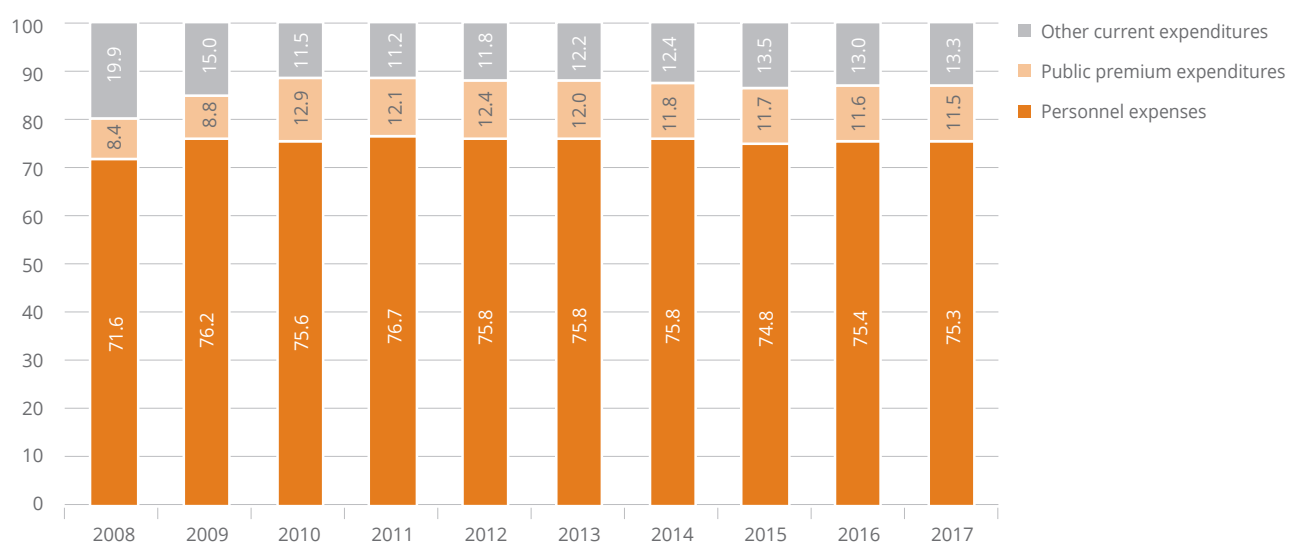
investment budget. Within this scope, the share allocated to MONE from the consolidated investment budget in 2014 increased to 14.3%.

In 2017, the share allocated from the consolidated budget to education was 10.9%. Particularly in the years when there was a significant increase in the number of students, it can be seen that there was an increase in the share allocated to MONE from the investment budget.

The construction of schools and class rooms and rates of new teachers recruited also increased with the increasing number of students.

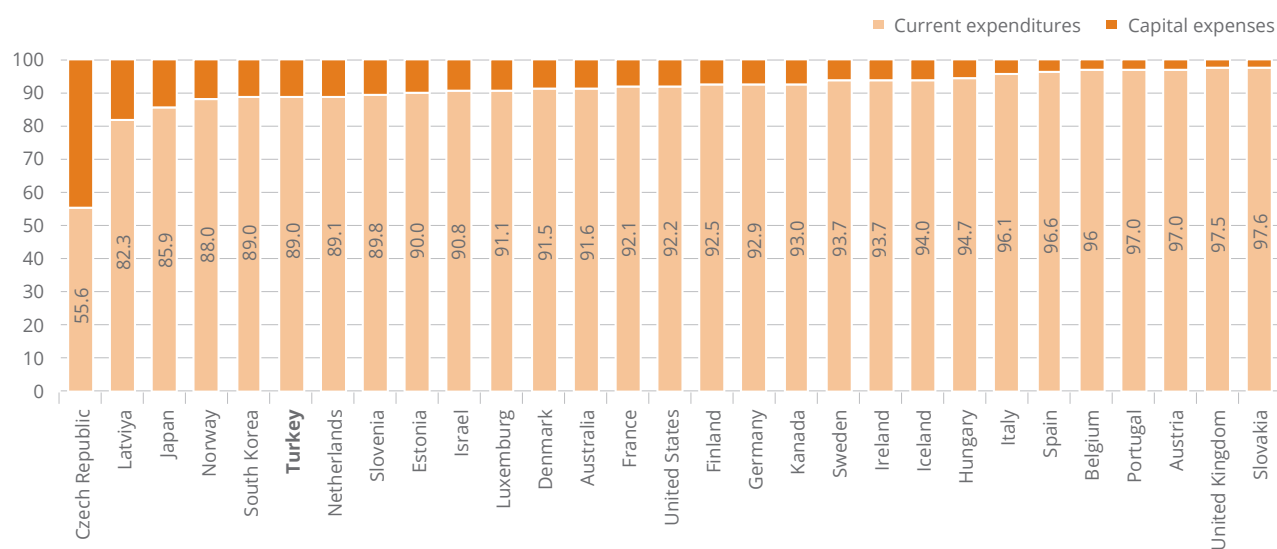
Figure E.3.4 demonstrates the change over the years of staff expenses and other current expenses among all current expenses in the MONE budget between 2008-2017. The previous data expressed that a high portion of the MONE budget was spent on the current expenses.

Figure E.3.4 Trends in the share of staff expenses within current expenses under MONE's budget (2008-2017)



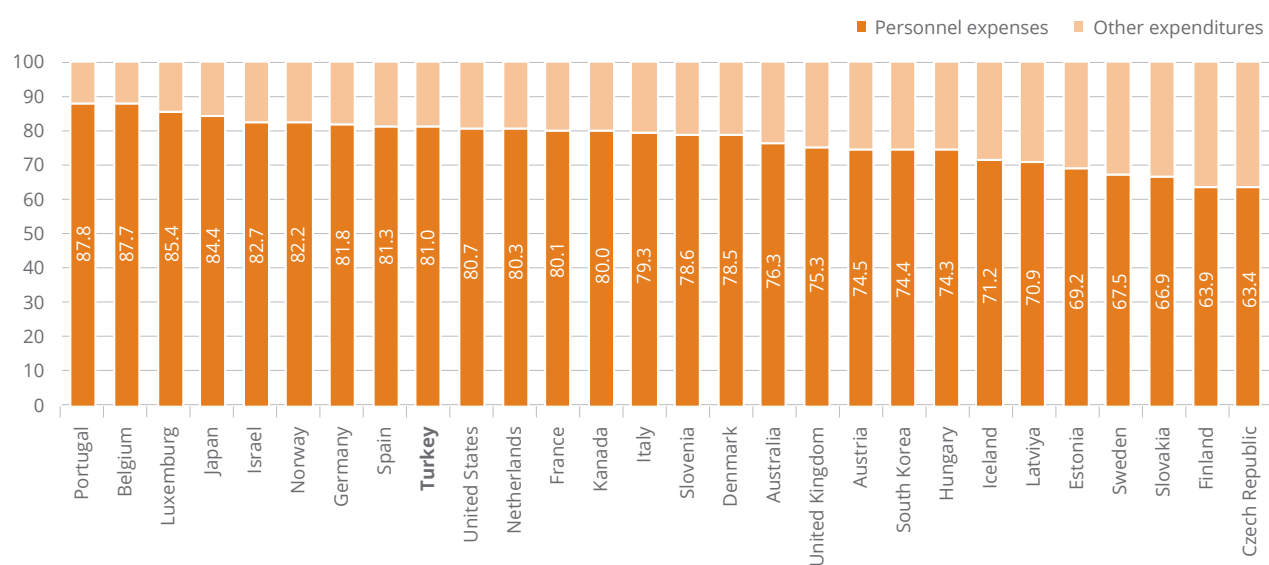
Source: Compiled by Eğitim-Bir-Sen (2016) using National Education Statistics published in various years and updated by the authors.

Figure E.3.5 Distribution of expenditures amongst levels other than higher education and pre-school in OECD countries compared to current and capital expenses (2014)



Source: OECD (2017)

Figure E.3.6 Share of staff expenses within current expenses in OECD countries (2014)



Source: OECD (2017)

Figure E.3.4 demonstrates the distribution of current expenses within themselves in a more detailed manner. The rate allocated to staff expenses in current expenses between 2008-2017 increased from 71.6% to 75.3%. In 2017, 11.5% of the current expenses comprised the premiums paid to the staff.

Expenditures made for consumables and various services needed for the schools (cleaning, security etc.) are considered under the scope of other current expenses. The rate allocated for other current expenses between 2008-2017 among the current expenses decreased from 19.9% to 13.3%. The basic reason for this is the fact that

expenditures for premiums and staff expenses increased further together with the increasing teacher employment rates.

Figure E.3.5 demonstrates the distribution of expenditures in elementary and secondary education to current and capital costs in OECD countries. The country where the rate of capital expenses proportionately to all education expenditures is the highest is Czech Republic, with 44%. Czech Republic is followed by Lithuania (18%), Japan (14%) and Norway (12%). Turkey was listed 6th in terms of the rate of capital expenses proportionate to education expenditures in all OECD countries, with a rate of 11%. Countries where the rate of capital expenses proportionate to education expenditures are the lowest are respectively Slovakia (2.4%), United Kingdom (2.5%) and Austria (3%). When Figure E.3.5 is examined, it can be seen that, similar to the situation in Turkey, current expenses constitute a significant portion of the education expenditures in all countries. Capital expense rates are higher in countries whose development process is ongoing and which are rapidly growing.

Figure E.3.6 demonstrates the share of staff expenses in OECD countries in current expenses. As it can be seen from the figure, similar to the situation in Turkey, a significant portion of current expenses comprises staff expenses in all countries.

Within this scope, the rate of staff expenses to current expenditures was 76.7 on average overall in OECD countries. In Turkey, this rate is a bit above the OECD average at 79.9%. In countries such as Switzerland, Luxembourg and Belgium, where the teacher salaries are at the highest levels, this rate is quite higher. In these countries, staff expenses comprise more than 85% of current expenditures. Countries in which the share of staff expenses within total current expenses are the lowest are Czech Republic (54%), Slovakia (63%) and Finland (63%).

This section examines the data related to students enrolled in private schools under the scope of education and teaching support by MONE after 2014. Furthermore, in this indicator education and teaching support distribution by school type is also analyzed.

In Table E.4.1, the number of students to benefit from education and teaching support between the years (2014-2017) and the amount of support paid to private schools are shown. According to this, the number of students planned to benefit from the education and teaching support had a significant decrease over the years. Whereas a quota of 250 thousand was planned in 2014, a quota of 230 thousand was allocated in 2015, and a quota of only 75 thousand was allocated in the years 2016 and 2017. Despite the decrease in the quota, it can be seen that there is a relative improvement in the amount of support provided to students. Whereas the amount to be paid per student was 2,500 TL in 2014 for the the preschool level, this increased to 3,060 in 2017. Also the payment to be made per student for primary schools and basic high schools between the same years was increased from 3,000

TL to 3,680 TL, and for middle school and other private schools from 3,500 TL to 4,280 TL.

Table E.4.2 demonstrates the total number of students who benefited from the education and teaching support between 2014-2017. As it can be seen from the table, the total number of students who benefited from the support in 2014 when the education and teaching support was first implemented, was 167,414. Namely, around 67% of the total quota allocated under the scope of the practice could be used.

In the following year, 171,316 new students were added to this number and the total number of students who benefited from the support increased to 338,730. The total number of students who benefited from the support in 2016-2017, decreased compared to the previous year to 315,716. In addition to this, when we look at the status of those benefiting from the education and teaching support by level, 5,831 students in preschool, 82,279 students in primary school, 84,850 students in middle school, 73,291 students in high schools and 69,465 students in basic high

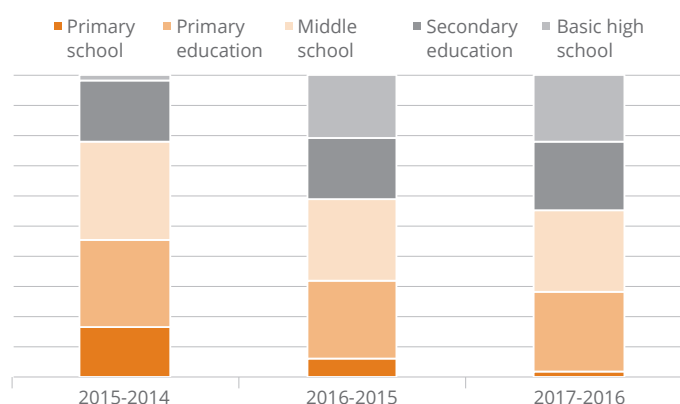
Table E.4.1 Number of students to benefit from education and teaching support and the amount of support to be paid to private schools by year (2014-2017)

School type	2014		2015		2016		2017	
	Amount of support (TL)	Number of students to be supported as the first time	Amount of support (TL)	Number of students to be supported as the first time	Amount of support (TL)	Number of students to be supported as the first time	Amount of support (TL)	Number of students to be supported as the first time
Primary School	2,500	50,000	2,680	20,000	2,860	6,000	3,060	6,000
Primary Education	3,000	50,000	3,220	50,000	3,440	15,000	3,680	15,000
Middle School	3,500	75,000	3,750	50,000	4,000	15,000	4,280	15,000
High School	3,500	75,000	3,750	110,000	4,000	15,000	4,280	15,000
Basic High School	3,000		3,220		3,440	24,000	3,680	24,000
Total	-	250,000	-	230,000	-	75,000	-	75,000

Source: Compiled using the statistics in the annual Budget Presentation report published by MONE.

Table E.4.2 Numerical and proportional distribution of students benefiting from education and teaching support according to level (2014-2017)

	2014-2015	2015-2016	2016-2017
Primary School	27,772	19,524	5,831
Primary Education	47,563	87,332	82,279
Middle School	54,961	91,695	84,850
Secondary Education	33,677	68,379	73,291
Basic High School	3,441	71,800	69,465
Total	167,414	338,730	315,716



Source: Compiled by Eğitim-Bir-Sen (2016) using the data provided from MONE has been updated by the authors using the statistics in annual Budget Presentation of MONE.

Note: Basic high schools are shown separate from secondary schools.

schools benefited from the incentive. The most striking issue here is that the rate of students benefiting from education and teaching support in preschool is quite low compared to other levels and one third of the students enrolled in basic high schools did not benefit from this incentive.

Table E.4.3 demonstrates the number of students benefiting from education and teaching support by level, as well as the share of these students among students in private education as of 2016. According to this, 38.6% of the primary school students enrolled in private education institutions benefited from education and teaching support, and this rate is only 2.9% at the preschool level. At the middle school level, 29.5% of the students enrolled in private education institutions benefited from education and teaching support. It can be seen that there

Table E.4.3 Students benefiting from education and teaching support by level and the share of these students receiving a private education (2016)

	2016-2017	Number of students	Percentage of benefited students
Primary School	5,831	203,411	2.9%
Primary Education	82,279	213,183	38.6%
Middle School	84,850	287,928	29.5%
Secondary Education	73,291	296,681	24.7%
Basic High School	69,465	203,760	34.1%
Total	315,716	1,204,963	26.2%

Source: Compiled using statistics in the annual Budget Presentation report published by MONE.

Note: Basic high schools are shown separate from secondary schools.

is an important difference between basic high schools and other high schools that constitute the secondary education level. 34.1% of all students enrolled in basic high schools and 24.7% of students enrolled in private high schools benefited from education and teaching support.

The human capital theory, which was asserted in the 1960s, defined education as an investment and emphasized the importance of this investment for the wealth of both individuals and societies as a whole (Schultz, 1961). Empirical studies carried out following the emergence of human capital theory clearly demonstrated the individual and social benefits of education (Dee, 2004; Hanushek ve Kimko, 2000; OECD, 2017). According to the findings of current studies, having graduated from higher education does not necessarily mean earning a higher income. Moreover, it was demonstrated that there is an important relationship between the average levels of education of individuals and the economic development of countries. Furthermore, the relationship between education and economic development is at a higher level in developing countries (Barro and Sala-i Martin, 1995). Within this scope, it is highly important to examine in detail the public and private expenditures in education in terms of the amount and the areas of use, and to develop recommendations within this scope.

The increase in recent years in private expenditures on education can be conceived as a natural result of this orientation. Some researchers claim that the private sector taking a bigger role in the education processes could have a positive impact on the quality of education (Bray, 2002; Moumné and Saudemont, 2015). Even the expectation that the share of the private sector in education should increase was reflected in the 64th Government Program and 10th Development Plan (Ministry of Development, 2013). However, the fact that private expenditures in education expenditures correspond to a significant rate could increase the disadvantages of those who do not have the opportunity to allocate more resources to education (Moumné and Saudemont, 2015). That means, increases in private expenditures on education may lead to the re-emergence of inequality in education.

Despite the fact that there has been a significant increase in the number of students in Turkey over the past 10 years, a general increase trend is seen in the expenditures per student. Whereas the expenditure per student made for all levels was 2,376 TL in 2007 (according to 2016 prices), this figure increased to 3,561 TL in 2016. This corresponds to 2,081 TL and 3,162 TL at the elementary education level, and 3,424 TL and 4,415 TL at the secondary education level. Moreover, it can be seen that, in the last 10 years, expenditures per student increased from 4,279 TL to 5,897 TL in vocational high schools, and from 2,878 TL to 3,019 TL in general high schools with a relatively slight increase (see Figure E.2.1) This means, Turkey has increased expenditures per student within the last 10 years at a rate of 50% at the elementary education level and 30% at the secondary education level.

The average spending per student overall in Turkey for all educational levels is 4,907 TL. However, there are significant differences in terms of expenditures per student between provinces. Whereas the expenditure per student is 11,860 TL in Ankara where the central organization of the Ministry is located, the corresponding amount in İstanbul is just 2,878 TL il. Similar to İstanbul, in some cities

which receive many migrants and where population density is high, the expenditure per student is below 4,000 TL. (see Figure E.2.3) In some provinces located in Eastern South Eastern Anatolia regions, despite the fact that the population density is quite low, the expenditures per student are significantly below Turkey's average. It is well known that there are important inequalities between the regions in terms of participation in education (MONE, 2017; Tomul, 2007) and in particular the Eastern and South Eastern Anatolia regions are in disadvantageous positions (Polat, 2014). Within this scope, the fact that the expenditures per student significantly differ between provinces raises increasing concerns related to the remedial of existing inequalities.

While in terms of average expenditure per student at the high school level Turkey is at the bottom among OECD countries, it can only surpass Mexico at the primary school and middle school levels. Whereas the OECD averages of expenditures per student in primary school, middle school and high school levels are respectively 8,733\$, 10,235\$ and 10,182\$, the expenditure per student in Turkey for the same levels are 3,589\$, 2,953\$ and 3,570\$ (Figure E.2.4). Investments in education are directly related to the quality of education provided to students. Within this scope, it is expected that student success will increase as expenditures in education increase. The existing data supports this expectation. For example, it can be seen that there is a strong relationship in the positive direction between countries expenditures per student and student successes in PISA 2015 (OECD, 2017).

The public resources allocated to education in Turkey have significantly increased in the last 17 years both in terms of the amount and the percentage of the general budget and GDP. The budget allocated to MONE increased from 3.3 billion TL to 85 billion TL in 2000. In this period, the ratio of the budget allocated to MONE from the general budget had an important increase from 7.2% to 13.2%. That means, Turkey allocates almost 13% of the central budget to education expenditures before the higher education level. The MONE budget ratio within the GDP increased significantly over the last 17 years, reaching 3.5% from 2% (see. Figure E.1.1)

Education is generally defined as a public service and thus it is expected that a significant part of education expenditures are covered from the public budget. Parallel to this general approach, it can be seen that a high portion of educational expenditures in all OECD countries (OECD average 91%) is covered by public resources. Similarly, the rate of education expenditures made from public resources in Turkey to all educational expenditures is 80% (see Figure E.1.6). When compared with OECD countries, the share allocated from the central budget of Turkey and the total expenditures made to education proportionate to the GDP remains below the OECD average. According to 2014 data, the share allocated by OECD countries to education from the general budget (excluding higher education) is 8.2%, while Turkey allocates 7.8% of its general budget to education. The proportion of total education expenditures to the GDP is 3.6% in OECD countries, and 3.2% in Turkey. However, Turkey is one of a couple of countries with the lowest rate of spending on education from public resources relative to GDP. Whereas the OECD average for this rate is 3.35% as of 2014, in Turkey it corresponds to 2.56% (see Figure E.1.3 and Figure E.1.5). Despite the fact that the share allocated by Turkey to education within the GDP and the general budget increased at a rapid speed in recent years, it is still beyond the OECD average in terms of the share allocated to education. However, as a result of the resources allocated to education in recent years, Turkey has caught up with the OECD average.

As opposed to the ordering in public expenditures, Turkey is the 4th country with the highest rate of private expenditures to education relative to GDP, with 0.62%. In addition to the expenditures made for preparatory courses for the entrance exams and private tutorials, the transformation of private courses to basic high schools over the past couple of years and the provision of support to students enrolled in private education institutions, increased preference towards private education institutions (see Part A).

Turkey is at the top among all OECD countries in terms of the increase in the amount of total expenditures for education and expenditures per student between 2010-2014 (see Figure E.2.5). There has been an increase of 4% in the total expenditures to education and 5% in expenditures per student overall in OECD countries in the period specified. When we look at the change in Turkey during the same period, there was a significant increase of 47% in total expenditures and 30% in expenditure per student. Turkey is one of the countries that has had the highest increase in number of students in the last ten years. Despite this increase, expenditures per student increased by significant amounts (OECD, 2017). However, despite all these positive developments, the existing expenditure amounts still continue to remain under the OECD average.

The biggest portion of expenditures made from the MONE budget comprises the staff expenditures. Whereas the rate of staff expenses to the MONE budget was 67% in 2008, this rate reached 69% in 2017. Procurement of goods and services and capital expenditures are other important budget expenditures. Whereas the rate of capital expenses to the MONE budget was 5.5% in 2008, it was 8.5% in 2017. The rate of expenditures for the procurement of goods and services relative to the budget decreased slightly from 9.7% to 9.5% between 2008-2017 (Figure E.3.1). When the shares of current and capital expenses from the MONE budget are examined, it can be seen that, in the last ten years, the current expenses were generally between 91-94% and the capital expenses were between 6-9%. (See Figure E.3.2). In particular, it can be seen that there has been some increase in the capital expenses with the effect of the 4+4+4 reform after 2012, increasing from 6% to 9%.

Turkey ranks fifth among all OECD countries in terms of the rate of capital expenses to the total education budget. The current expenditures in all OECD countries are at a higher level than capital expenditures. In general, it can be seen that the rate of capital expenses to the total education budget is below 10%. From the point of the share of staff expenses within all current expenses, Turkey is above the OECD average of 77% with a rate of 80%. Countries where this rate is higher are those who have solved the problem of access and schooling many years ago and that have no infrastructural problems.

Hundreds of thousands of students benefited within a short period of time from the practice of providing education and teaching support to students who continue their studies in private education institutions, which was launched in 2014 by MONE. Whereas the number of students who benefited from this support in the 2014-2015 education and teaching year, when the practice was first launched, was 167 thousand, the total number increased to 339 thousand together with the students who benefited from the practice in the following year. However, despite the fact that

a quota of 75 thousand was allocated for the students who would benefit from the practice for the first time in the 2016-2017 education and teaching year, the total number of students who benefited from the support decreased to 316 thousand. One of the reasons for this decrease relates to the fact that the quota provided to preschools was decreased at a significant level in 2016. However, it can be seen that there was no significant increase compared to previous year in other levels, and that there were even relative decreases. These decreases may be related to the fact that some students who deserved to benefit from the education and teaching support in the previous years graduated from their current levels and continued in public school in the following year. More clearly put, a student who goes to a private school at the middle school level could have continued to a public high school when he/she passes to the high school level. In the 2016-2017 educational term, 6 thousand students at the preschool level, 82 thousand students in primary school, 85 thousand students in middle school, 73 thousand students in high school and 69 thousand students in basic high schools benefited from this support.

40% of private primary school students, 35% of basic high school students, 30% of private middle school students, 25% of private high school students and 3% of preschool education students have benefited from education and teaching support. When compared with other levels, it can be seen that very few preschool students received education and teaching support. In addition to this, when we include basic high school in secondary education, almost half of the students who receive an education and teaching support are at the secondary education level.

The education and teaching support practice that was launched in 2014 by MONE, is a policy that encourages the student flow to private schools. The decision on incentives for students who go to private schools affected the process of transformation into private schools is an important problem (Eğitim-Bir-Sen, 2016). On the other hand, as it was discussed in Indicator A, there has been a significant increase in the number of private school students in recent years. It is considered that there is an important effect of education and teaching support in this increase. In summary, one fourth of students enrolled in private teaching institutions in Turkey benefit from education and teaching support. That means, one in every four children in private teaching institutions benefit from the incentives provided by the state. The most important problem here is who benefits from the education and teaching support. With the regulation, the possibility of families with low levels of income receiving support has increased. However, considering the fact that even the lowest private school fee is at least half of the annual income of a person working for a minimum wage salary, and even the fees of some private schools have increased up to 60-70 thousand Turkish Lira (enokul, 2017), the possibility of a family with low income to send their child to a private school is quite low. For that reason, it is highly possible that only children of families which are socioeconomically advantageous can really benefit from education and teaching support. Another issue is that the extent to which this program makes it possible to decrease the burden of education is unknown. Because, places where the education burden is high are the disadvantaged regions where families with low income level live. It is a very low possibility that families in these regions can send their children to private schools under the scope of this program. Therefore, the possibility of this policy decreasing the education burden in disadvantaged regions is quite low (Eğitim-Bir-Sen, 2016).

- The rate of the budget allocated by the Turkish state to education relative to both the central budget and the GDP has continuously increased over the years. However, when compared with other OECD countries, it can be seen that these indicators are still under the OECD average. In particular, Turkey is at the bottom among all OECD countries in terms of the rate of public expenditures relative to the GDP. Within this scope, the increase trend in the share allocated to education from the general budget should be maintained. The budget allocated to education should be increased further in order to provide the young population with a more qualified education service and to increase international competition.
- It can be seen that expenditures made per student for different levels in Turkey are generally experiencing an increase trend both in terms of the total amount and the rate compared to per capita income. Turkey is also the OECD country which has increased expenditures per student the most between 2010-2014. However, despite this positive trend, the amount of expenditures per student in Turkey corresponds to around one third of the average expenditure in OECD countries. With this condition, Turkey is one of the lowest among OECD countries. Therefore, it is necessary to continue by accelerating the increase trend seen in expenditures per student. For that reason, it is targeted to increase the per capita expenditure, which was 3,500 TL in 2017, to 5 thousand TL within a short period of time.
- It can be seen that expenditures per student differ significantly among provinces. Particularly in provinces with a dense population that receives at high level of migration, such as İstanbul, Gaziantep and Şanlıurfağ, where this rate is much lower than the Turkish average. A similar table is seen in some provinces which are located in Eastern and South Eastern Anatolia regions and which have a relatively lower population. There is a need to increase the budget allocated to these provinces by putting special emphasis on provinces where expenditures per student are under Turkey's national average. That means, in the budget distribution process by region, province and school, it is necessary to put some emphasis on disadvantageous regions, and to transfer more resources to these regions/provinces/schools in order to improve education there.
- Similar to many countries, Turkey allocates a high portion of education expenditures to current expenses. Whereas the share of staff expenses in all current expenses is above the OECD average, it is below many developed countries. Within this scope, more improvements should be made particularly in teacher's salaries.
- It can be seen that the share of current expenditures other than staff expenditures (consumables, cleaning, security etc) within the total current expenses has been significantly decreasing particularly after 2010. Taking into account the fact that the expenditures in question are highly important for the schools, expenditures to be made within this scope should not be restricted and a higher budget should be allocated to schools in order to be spent on these issues.

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Educators Trade Union General Center

Oğuzlar Neighbourhood Av. Özdemir Özok Street No: 5 Balgat-Ankara/TURKEY
Phone: +90 312 231 23 06 / Gsm: +90 533 741 40 26 / Fax: +90 312 230 65 28

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