

Education Finance and Equity in Turkey

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I. The Context

In 1923, the year in which the Republic of Turkey was founded, the adult literacy rate was approximately 10 percent. Such a dismal starting point in terms of human capital is certainly undesirable, but this allowed the founders of the Republic to carry out major reforms that might otherwise have been more difficult to implement. Indeed, the key features of the Turkish education system were established in the early years of the Republic. The *Tevhid-i Tedrisat* law of 1924 marked a move toward secular education, and in 1928, the Latin alphabet was adopted. In 1961, the duration of primary schooling was increased from three years (in rural area schools) to five years.¹

The idea of 8-year primary education first emerged in 1970, with the establishment of a working group to formulate the specifics of the proposed changes. This led to a 1973 law (*1973 sayılı Milli Eğitim Temel Kanunu*), which declared the duration of basic education to be 8 years. In practice, however, the current structure of the Turkish education system was established during the 1997–98 school year, with the increase in compulsory schooling from 5 years to 8 years for children aged 6 to 14. Upon completion of the 8-year primary school cycle, students may enroll in general or vocational secondary schools, which is three years in duration. Tertiary schooling is provided by universities and by specialized vocational training academies that are either two or four years in duration, depending on the program.

A key implication of the 1997–98 education reform was the phasing out of lower-secondary (general and vocational) schools that served grades 6 to 8. This reform was controversial, since both lower-secondary parts of vocational schools that offered religious training and other lower-secondary schools had to be closed. The reform, however, also resulted in a renewed public and private commitment to the achievement of universal enrolment levels in basic education. On the public side, extrabudgetary sources were channeled into education to cope with increased enrolments. Furthermore, sizable resources were obtained from the World Bank (through the June 25, 1998 Basic Education Program Loan and other projects that followed), the European Union, and other sources. On the private side, the “build a school” campaign enjoyed a boost, and several relatively large organizations emerged to collect donations with the objective of supporting the schooling of poor children.

Enrolment rates increased soon after the reform. During the 1995–96 school year, the primary school enrolment rate was 89.8 percent; by the 1999–2000 school year it had

¹ A detailed historical overview can be found in *75 Yılda Eğitim*, Türkiye İş Bankası, July 1999, Istanbul Turkey.

grown to 97.6 percent. For secondary school, the enrolment rate increased from 55 percent to 59.4 percent during the same period. After the start of the reform in the 1997–98 school year, enrolments in primary schools increased from 9.1 million students to over 10.3 million in the 2001–02 school year. A substantial school and classroom construction effort dominated this period, and the number of classrooms increased from 210,905 to 280,257. Furthermore, over 70,000 new primary school teachers have been recruited since 1997.² For the 2001–02 school year, the numbers of schools, students, and teachers by education level and urban/rural residence are depicted in Table IV.1.³

Table IV.1. Number of Schools, Students, and Teachers in the 2001–02 School Year

Public Schools									
Schooling Level	Number of Schools			Number of Students			Number of Teachers		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Pre-Primary	10,554	7,361	3,193	256,392	216,625	39,767	14,520	12,579	1,941
Primary	34,993	9,906	25,087	10,310,844	7,500,373	2,810,471	375,511	256,272	119,239
Secondary Total	6,065	5,463	602	2,312,271	2,212,658	99,613	138,785	131,482	7,303
General	2,637	2,276	361	1,490,376	1,427,845	62,531	72,609	68,092	4,517
Vocational	3,428	3,187	241	821,895	784,813	37,082	66,176	63,390	2,786
University	53			1,156,915			63,029		
Private Schools									
Schooling Level	Number of Schools			Number of Students			Number of Teachers		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Pre-Primary	799			18,152			1,822		
Primary	642			171,623			14,811		
Secondary Total	487			73,136			8,229		
General	465			72,051			8,128		
Vocational	22			1,085			101		

² A comprehensive review of the events and issues that characterized the Turkish education system in the 1990s until 2004 can be found in Dulger (2004).

³ Extracted from *2002 Yili Basinda Milli Egitim*, TC Milli Egitim Bakanligi, December 2001, Ankara Turkey.

University	23	55,022	3,721
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Note: For private schools, data are not available separately for urban and rural areas, although a majority of these schools are located in urban areas. The statistics for university level are for the 2000–01 school year.

The Turkish Government originally planned to increase compulsory schooling once again, from 8 to 12 years, fairly quickly. This policy proposal seems to be on a hold, although it is very much a part of the long-term agenda,⁴ and thus an improved understanding of the implications of the previous reform (of 1997–98) for the poor would provide guidance for further modifications to the compulsory schooling law. This report aims to do that by describing the positive developments in recent years. It also identifies key problem areas that emerge as challenges to the schooling of poor children. Finally, the findings of this study will serve as inputs into the ongoing Turkey Education Sector Study titled, “Sustainable Pathways to an Equitable, Effective, and Efficient Education System,” which aims to build a technical foundation for policy analysis, and provide an open forum for a technically based dialogue in Turkey.

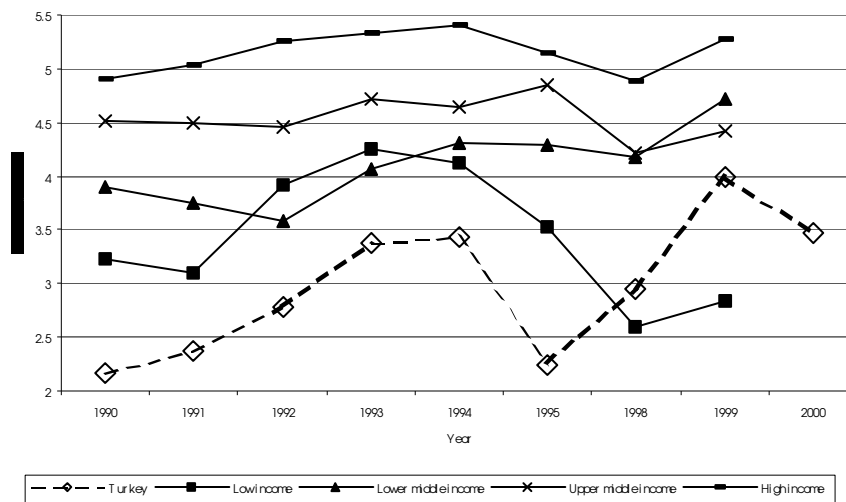
II. Public Spending on Education

How Does Turkey Compare with other Countries?

Turkey’s public spending on education significantly increased after 1998, both in real terms and as a percentage of gross domestic product (GDP) (Figure IV.1). From this, one might conclude that Turkey is on the right track. Indeed, this would be an accurate conclusion, except for the fact that even after such a dramatic increase, Turkey’s public spending on education as a percent of GDP is comparable to that of low-income countries, less than the average for lower-middle-income countries (the category into which Turkey falls), and much less than the average for upper-middle-income and high-income countries (Figure IV.1).

Figure IV.1. Public Spending on Education as Percentage of Gross Domestic Product

⁴ See, for example, 2002 Yili Basinda Milli Egitim, TC Milli Egitim Bakanligi, December 2001, Ankara Turkey.

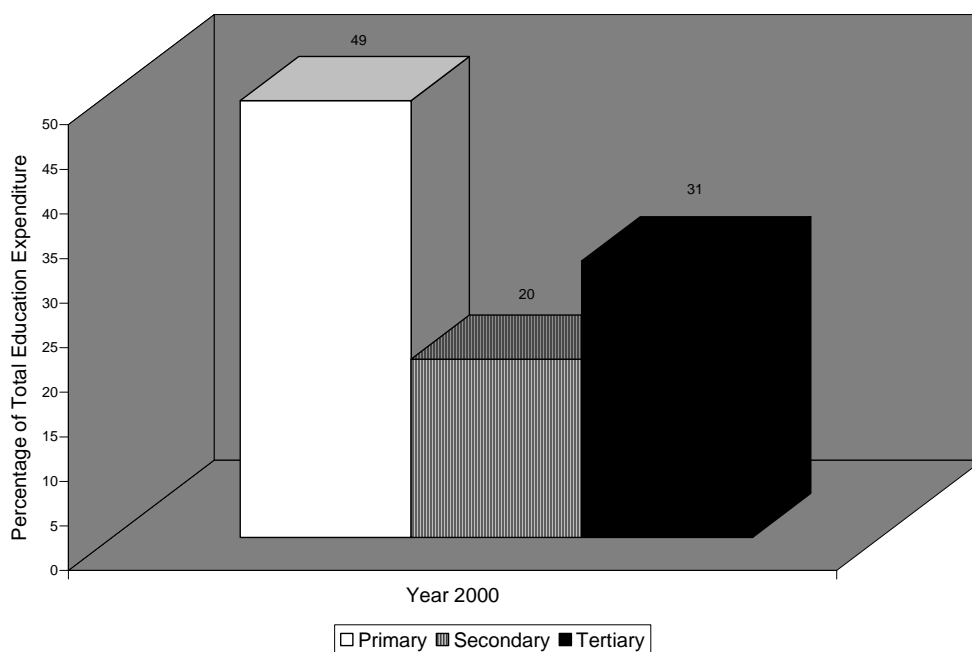


Source: World Development Indicators (WDI). Years 1996 and 1997 are not included since the WDI data set does not provide spending figures for those two years.

Distribution of Public Resources Across Different Levels of Schooling

In terms of distribution of public expenditure on education across different levels Turkey fares well, since the share of funds allocated to primary schooling — where the public returns are high and the poor are most likely to benefit from — is about 50 percent of total education expenditure (Figure IV.2). Even though a simplistic look at the distribution of public resources across education levels does not signal a problem, since the total amount of resources devoted to education is on the low side, the education system suffers at all levels.

Figure IV.2. Public Spending by Level of Schooling, as Percentage of Total Education Expenditure



Source: World Bank EdStats database. Data are not available for more recent years.

Incidence of Public Spending on Education

The expansion of compulsory schooling to 8 years had an extremely positive impact on the distribution of public education spending across poor and rich households (Table IV.2). In 1994, only 15.8 percent of public spending on basic education reached the poorest 20 percent of households. In 2001, 21.7 percent of public spending on basic education reached the poorest 20 percent of households because the enrolment rates of children coming from poor households increased substantially. Table IV.2 also shows that while some pro-poor redistribution occurred in the distribution of public secondary education funding between 1994 and 2002, much remains to be done: only 13 percent of public secondary school spending reached the poorest 20 percent of population in 2001 (up from 8.7 percent in 1994).

These estimates of incidence of public spending on education are obtained by imposing certain assumptions. One such assumption is that the public schools attended by poor children, on average, receive the same amount of funding as the public schools attended by the wealthy students. If public schools with higher poor-student presence receive less funding on average, than this means the figures reported by Table IV.2 overestimate the amount of resources that reach the poor. The figures for 1994 come from the education section of the Turkey Public Expenditure and Institutional Review (World Bank 2001*), using student enrolment information from the 1994 Household Expenditures Survey, which does not identify enrolment status in private schools, and ascertaining level of schooling currently attended has to be determined by certain assumptions (described fully in the Turkey Public Expenditure and Institutional Review). These limitations (that is, lack of information on private school attendance and imprecise school enrolment information) do not apply to the reported 2001 figures, which are constructed using enrolment data from the 2001 Consumption and Income Survey.

Table IV.2. Incidence of Public Spending on Education in 1994 (before the expansion of compulsory schooling) and in 2001 (after the expansion of compulsory schooling)

	Household Income Quintiles				
	1 (poorest)	2	3	4	5 (richest)
1994—Turkey					
Basic education (8 years, primary + middle)	15.8%	21.1%	22.2%	20.6%	20.3%
Secondary education	8.7%	16.2%	22.3%	25.4%	27.5%
Total public expenditures	13.5%	19.5%	22.2%	22.2%	22.7%
1992–94—Average Statistics for Lower-Middle-Income Countries*					

Primary	25.4	22.4	20.0	18.4	13.7
Secondary	14.0	17.4	21.3	23.3	24.0
Tertiary	4.5	10.0	14.4	25.5	45.5
2001—Turkey					
Basic education (8 years)	21.7%	21.4%	21.0%	22.0%	13.9%
Secondary education	13.0%	14.6%	25.4%	22.8%	24.2%
Total public expenditures	19.2%	19.4%	22.3%	22.2%	16.9%

* The countries included satisfy two conditions: availability of education incidence statistics in the World Bank's EdStats database, and being categorized as a lower-middle-income country by the 2003 WDI. These are Ecuador, Guyana, Jamaica, Morocco, Peru, Romania, and South Africa. None of these countries, when considered alone, provides an adequate reference point when compared with Turkey. As a group, however, they provide some insights into the general circumstances in lower-middle-income countries.

In order to put the outcome of the incidence analysis in context, the middle segment of Table IV.2 reports average statistics for other lower-middle-income countries. Such a cross-country comparison suggests that prior to the expansion of compulsory schooling Turkey was at an extreme when it comes to distribution of public resources in a way that benefited the wealthier households. After the implementation of 8-year compulsory schooling, the distribution of public funding became more in line with the experience of other countries at about the same level of economic development.

Incidence of Household Spending on Education

The distribution of household expenditures on education is even more unequal (Table IV.3). Only 2.2 percent of total household expenditures on education was by poor households in 1994. After the expansion of compulsory schooling, as more children from poor households started participating in basic education, the poor households had to spend more, and thus education expenditures' share in total household spending increased to 6.2 percent. Regardless, household-level spending strongly reinforces the existing differences in the schooling environment experienced by poor children.

Table IV.3. Incidence of Household Expenditures on Education in 1994 (before the expansion of compulsory schooling) and in 2001 (after the expansion of compulsory schooling)

	Household Income Quintiles				
	1 (poorest)	2	3	4	5 (richest)
1994	2.2%	7.1%	9.4%	18.0%	63.3%
2001	6.2%	14.1%	16.6%	23.5%	39.6%

III. Traces of Inefficient Resource Allocation in the Education Sector

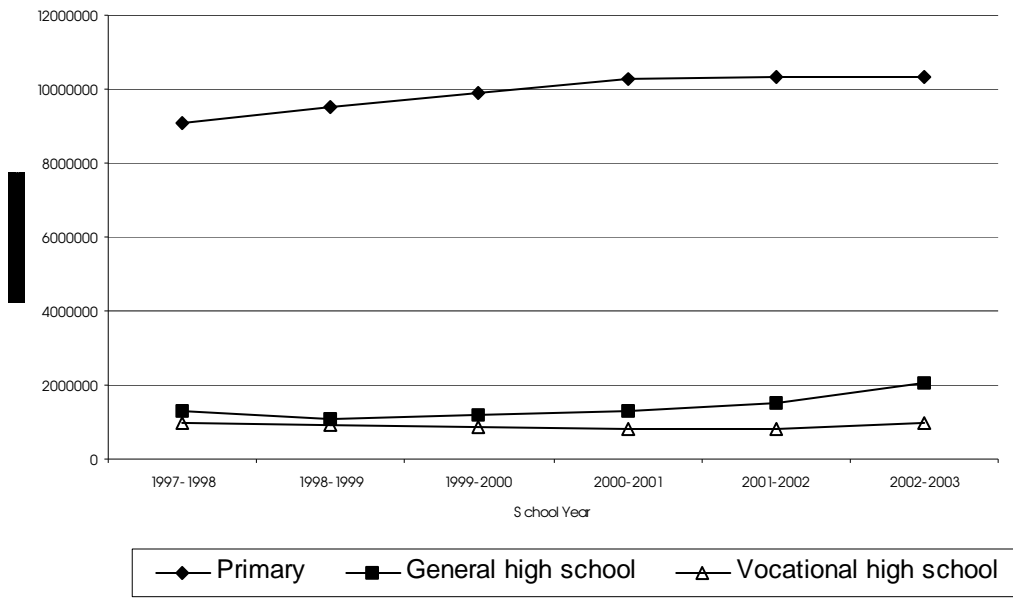
With the current levels of public spending on education, even after commendable increases after 1998, one cannot expect miracles on the education front even if resources were efficiently used. The system loses its ability to be even marginally adequate when resources are not used efficiently. Unfortunately, the available information suggests this is the case.

A full discussion of inefficiencies in the education sector is beyond the scope of this paper — this topic will be covered in detail by the ongoing education sector study titled “Sustainable Pathways to an Equitable, Effective, and Efficient Education System”. Among the topics that are important but left out are ideal classroom size, teacher characteristics, teacher compensation, and school amenities. Also, in Turkey there would be large payoffs to an elaborate evaluation of the short-term and longer-term effectiveness of information technology investments in schools to identify which groups benefit the most from computer availability in schools and under what conditions.

Classroom Size and Student-Per-Teacher Ratios in Primary, General, and Vocational Secondary Schools

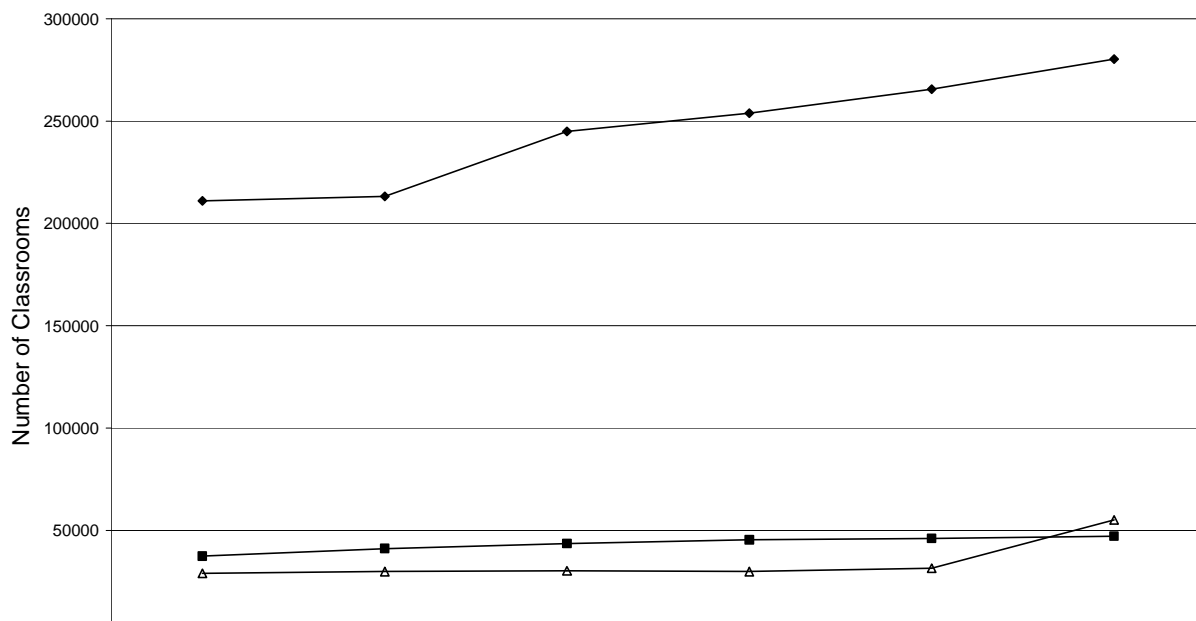
In recent years the number of primary school students has increased, as has the number of students enrolled in general secondary schools (Figure IV.3). The number of students enrolled in vocational secondary schools has remained about the same. How does the education system react to these trends? Oddly, by increasing the number of classes at the vocational school level, while keeping the number of general secondary school classes constant (Figure IV.4). On the positive side, the number of primary school classrooms also increased sharply after 1998 (also Figure IV.4).

Figure IV.3. Number of Students by School Type



Source: Ministry of National Education Statistical Yearbooks.

Figure IV.4. Number of Classrooms Over Time



Source: Ministry of National Education Statistical Yearbooks.

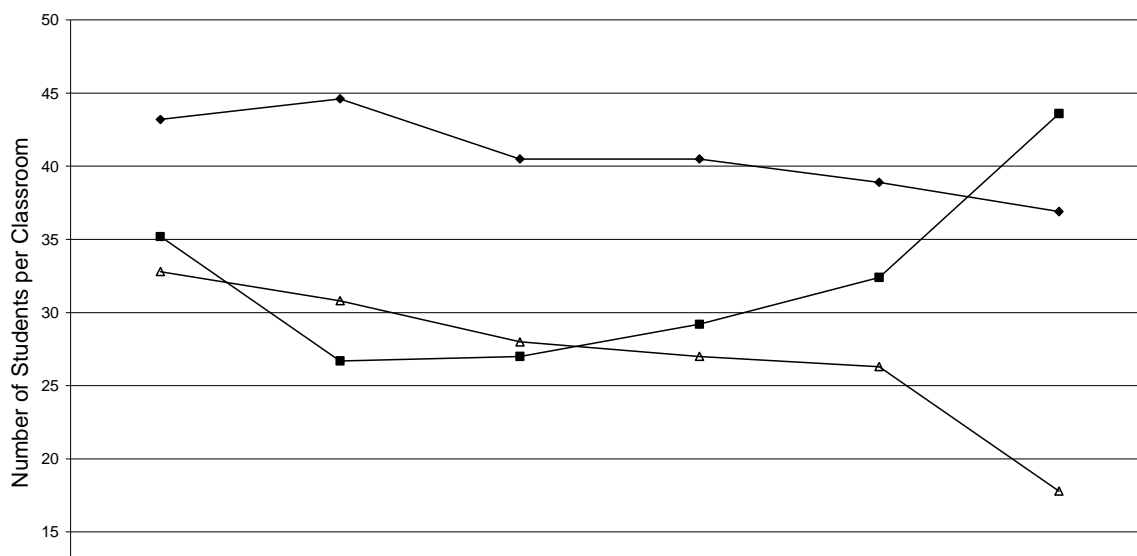
How does this pro-vocational-school policy affect student-per-classroom and student-teacher ratios? Figures IV.5 and IV.6 reveal the extent of misallocation of scarce resources at the secondary level, but they also show very encouraging results at the primary level.

Starting with the positive development that the increase in the number of classrooms at the primary cycle has been impressive in recent years, this has prevented increases in students per class at this level despite increased enrolments due to the expansion of compulsory schooling. In fact, the number of students per classroom at the primary level has declined from 43.2 in the 1997–98 school year to 36.9 in the 2002–03 school year.

The cohorts affected the most by the expansion of compulsory schooling are candidates for enrolling in secondary schools. The demand for general secondary schools has increased—enrolment rose from 1,094,610 in the 1998–99 school year to 2,053,735 in the 2002–03 school year. As a result, average classroom size increased steadily after 1998, and peaked at almost 45 in the 2002–03 school year.

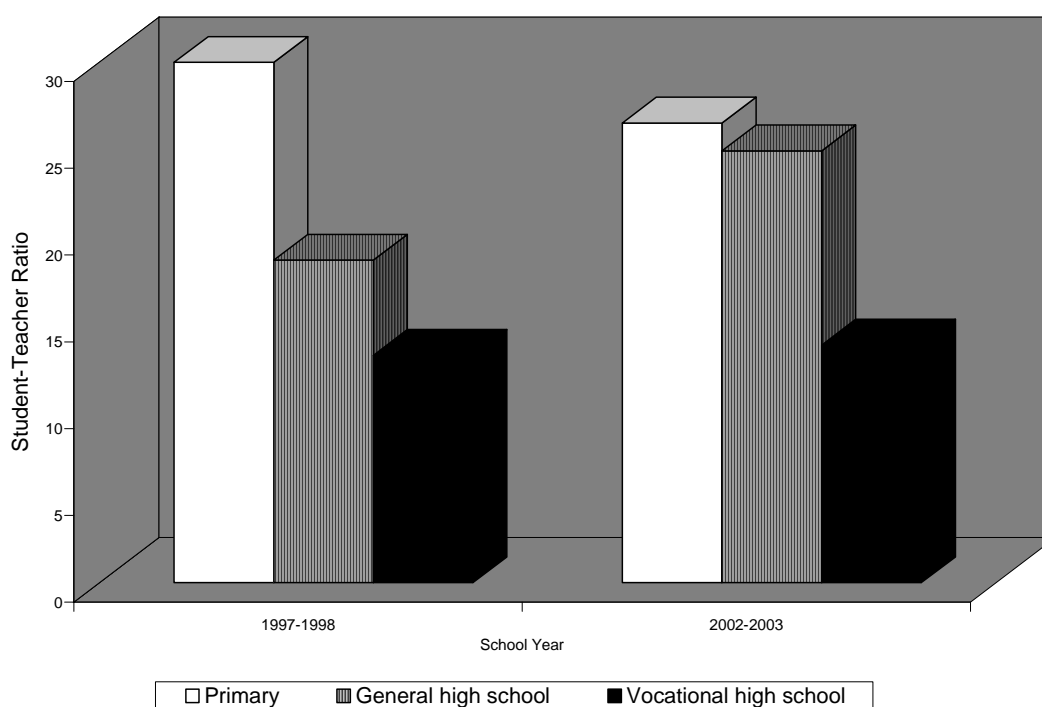
As mentioned, enrolment in vocational schools did not change much, but the number of classrooms increased for these schools. Thus, the average class size decreased from 33 in the 1997–98 school year to 18 in the 2002–03 school year. In vocational schools, the student-teacher ratio was only 14 in the 2002–03 school year.

Figure IV.5. Number of Students per Classroom by School Type



Source: Ministry of National Education Statistical Yearbooks.

Figure IV.6. Student-Teacher Ratios in the 1997-98 and 2002-03 School Years



Source: Ministry of National Education Statistical Yearbooks.

In 2002, about 32 percent of secondary school students were enrolled in vocational schools. The intention is to increase the share of vocational school students even more, even though there is excess demand for general secondary school education and there is significant room for increasing the availability of general secondary schools (as shown by this paper), vocational school graduates on average are as likely to be unemployed as others (shown later in this paper), provision of vocational secondary education is more expensive than provision of general secondary education (as partly shown here).⁵

⁵ 2002 Yili Basinda Milli Egitim, TC Milli Egitim Bakanligi, December 2001, Ankara Turkey.

IV. Distributional and Education-Quality Implications of Public Policies on Education

The question, “who suffers from inadequate public education funding?” is not that meaningful, since a policy that has such large effects on economic growth affects everybody. An alternative approach would be to consider “who suffers from inadequate public education funding *the most*”? In the Turkish context, two leading contenders are (a) females, and (b) poor children. Despite a consistent decline in the percentage of illiterate adults, as of 2002, 22 percent of female adults in Turkey were illiterate (down from 33 percent in 1990). For males, the percentage of illiterate adults declined from 11 percent in 1990 to 6 percent in 2002.⁶ The situation of the poor is described in detail below.

Characteristics of Children Not Enrolled in (Compulsory) Primary Education

Although it might have been natural to focus on pre-primary enrolments first, this section starts with an analysis of determinants of enrolment in primary education. The reason is because of extremely low pre-primary enrolment (and lack of relevant questions in household surveys). UNESCO estimated that only 6 percent of children of the relevant age group were enrolled in pre-primary school in 2000. There are 9,225 public and 432 private pre-primary schools in Turkey (1,657 are categorized under “other”).⁷

According to the 2002 HICES, 97 percent of the relevant age group (ages 6 to 14) are either enrolled in school or have already completed the primary cycle. The Turkish Government has attempted to increase compliance with the compulsory schooling law, by providing financial support to the poorest households who cannot afford to send their children to school — under both ad hoc social assistance and as supported by the World Bank under the conditional cash transfer component of the Social Risk Mitigation Project — and also in some cases by fining parents who might be unwilling to send their children to school for one reason or another (the reasons might be unwillingness to send girls to school in rural areas, or the desire to supplement household income through child labor etc).

Table IV.4 displays the characteristics of the “3 percent” that is left out of the schooling system. The distinguishing features of these children would be useful in targeting efforts to achieve universal enrolment in primary school.

⁶ The source for these statistics is the 2003 World Development Indicators database.

⁷ These data come from the Ministry of National Education, Milli Egitim Sayisal Veriler 2002–2003, Ankara 2003.

The age distribution of children who are not currently attending primary school rules out the possibility that many of these students are simply late enrollers: those age 9 or older make up more than 90 percent of all children who are primary-school age but who are outside the schooling system. About 50 percent of the children who are not attending school reside in Eastern Anatolia or South Eastern Anatolia. However, the 2002 survey is not representative at the regional level, and thus there may be some error in regional estimates. More than 70 percent of the children who are not enrolled in primary school are female, and more than 55 percent have illiterate mothers. These children tend to reside in rural areas (67 percent) and they tend to be poor (53 percent).

Table IV.4. Characteristics of Children of Aged 6 to 14, by Primary School Attendance Status (reported numbers are percentages)

	Attending or Already Completed (compulsory) Primary Schooling	Not Attending and Never Completed (compulsory) Primary Schooling
Gender		
Male	51.82	27.79
Female	48.18	72.21
Mother's Schooling		
Illiterate	26.37	55.75
Literate without diploma	6.01	7.45
Primary	54.06	28.23
Junior secondary	4.55	6.54
Secondary	6.82	0.38
More than secondary	2.19	1.64
Father's Schooling		
Illiterate	5.24	18.83
Literate without diploma	5.95	15.33
Primary	56.91	52.67
Junior secondary	11.41	3.69
Secondary	14.31	8.47
More than secondary	6.19	1.01
Residence		
Urban (more than 200,000)	39.98	33.32
Rural	60.02	66.68
Household Poverty Status		
Poor	33.69	53.15
Non-poor	66.31	46.85
Sample size	6,587	205

Source: 2002 HICES.

It might seem difficult to identify a small proportion of children, such as 3 percent, but for households with certain characteristics the percentage of children who are not

enrolled in school is much higher. Parental schooling and gender of the child alone may not be good enough to narrow down children who are not in school, but jointly these two indicators are adequate. Table IV.5 shows that if one focuses on fathers with no schooling, in almost 1 out of 10 cases a child (aged 6 to 14) who does not attend school would be identified. A systematic intervention that reaches all mothers and fathers without primary schooling would identify roughly 70 percent of children who should attend primary education but who do not. If these children attended school, the primary enrolment rate would increase from 97 percent to 99 percent.

Table IV.5. Primary school Attendance by Parental Schooling

	Percentage of Children Aged 6–14, Who Do Not Attend School (and who have not already completed primary)		
	Both Genders	Male	Female
Father did not complete primary (illiterate or literate without diploma)	9.1%	5%	12.5%
Mother did not complete primary (illiterate or literate without diploma)	6.1%	2.7%	9.7%

Sources: 2002 HICES.

School availability in the residential area might be one reason for non-enrollment. This issue seems to be especially relevant in less-developed areas for female children, even if transport to the nearest school is arranged by the local authorities. The 2001 Household Consumption and Income Survey (HCIS) data reveal that 88 percent of households have a primary school in their residential area. Primary school availability does not vary much by wealth, as measured by a household possessions index. In fact, if anything, the distribution of primary school availability is pro-poor (about 91 percent of the least-wealthy households report the availability of a primary school; about 85 percent of wealthiest households report availability). This trend is primarily driven by urban versus rural residence: 87 percent of urban households reveal primary school availability in their neighborhoods, while in rural areas this percentage increases to 95 percent. These statistics suggest that the school availability issue at the basic education level has been more or less resolved. In urban areas, even if a primary school is not available in the immediate residential area, there would be one in an adjacent neighborhood. For small rural villages, on the other hand, access to schooling is through government-subsidized transportation of children to nearby villages or towns. Table IV.6 presents the average distance to primary school, by residence and household wealth, conditional on school availability in the residential area. The mean distance to primary school is higher in rural areas and for the poor, but the differences are not large. Having said that, long distances might be more significant in rural areas because of physical barriers such as streams, hills and poor road conditions.

Table IV.6. Conditional on School Availability in the Residential Area, Estimated Distance (in meters) between Household’s Residence and the Closest Primary School: By Urban/Rural Residence and by Wealth (medians and means [in brackets])

Access	Residence			Wealth Quintiles (based on a household possessions index)			
	Urban	Rural	All	Group 1 (poorest)	Group 2	Group 3	Group 4
Primary School	300 [445]	500 [600]	300 [475]	300 [514]	300 [472]	300 [428]	300 [486]

Source: 2001 HCIS.

What Happens After Eight Years of Primary Education?

As shown previously, the demand for (noncompulsory) general secondary education has increased in recent years. This is likely to be one of the positive side effects of 8-year compulsory schooling, since it increased the number of potential secondary school students, and also increased the amount of time parents interact with teachers and the school system.

A convenient way to present the impact of the main factors that influence whether a child enrolls in secondary school is through the presentation of marginal effects on enrolment, as estimated by a probit model (Table IV.7). This is a reduced form approach, taking into account only the following: child’s gender, proxies for household wealth, indicators for parental schooling and presence in the household, and dummy variables for urban/rural residence and secondary school availability in the residential area. These models are estimated with and without school availability indicators, and also separately for males and females. The key insights from this exercise are as follows:

- Taking into account other factors listed above, being a male increases the probability of secondary school enrolment by 7 to 8 percentage points.
- Compared to the least-wealthy group of households, the next wealth category increases enrolment probability by roughly 7 percentage points. This figure increases to over 11 percent for other wealth categories.
- When other factors are taken into account, mother’s and father’s schooling coefficients are not statistically significant, except for the category “more than primary,” which is associated with a more than 10 percentage points increase in enrolment probability. (If both the mother and father have more than primary schooling, this translates into an over 20 percentage points increase in the probability of enrolment, which is quite substantial in itself).

- Mother's absence from the household severely reduces the chances of secondary school enrolment—by almost 16 percentage points. A peculiar result is the statistically insignificant coefficient estimates for father's absence.⁸
- Secondary school availability in the residential area is a very strong predictor of enrolment, leading to a 10 percent increase in probability of enrolment. Those who reside in urban areas reap another 5 percent increase.⁹

Estimating separate models by gender allows evaluation of the differential effects of certain household characteristics on the enrolment of boys and girls. Occurrence in the wealthiest group of households perfectly predicts secondary school enrolment for boys. Having a mother with more than primary schooling is more important for girls' schooling than for boys', but the differences are minor in models that control for school availability. The importance of father's more-than-primary schooling for girls' enrolment is quite pronounced though, increasing the probability of enrolment by 17 to 20 percentage points in alternative specifications. Mother's absence hurts girls' schooling prospects more. The impact of secondary school availability is gender neutral. Urban residence does not have a statistically significant influence on boys' enrolment, but it is crucial for girls' enrolment (giving a boost of a 21 to 26 percentage points increase in the probability of enrolment). The presence of such a large urban/rural residence effect—even after taking into account parental schooling and secondary school availability—deserves careful consideration. Some possibilities that might explain this trend are demand for girls' time in farm work, and the prevalence of teenage marriage.

⁸ This might be because we focus on the schooling of household head and his or her spouse's children. A selection bias might be responsible for this peculiar finding: it could be that if the father is not a part of the household (dead, divorced, and so forth), only women with certain unobserved (but pro-child education) characteristics become household heads. In other words, some women separated from the father of their children may become household members in an extended household, and the schooling status of these women's children is not captured in this estimate (because the household survey questionnaire allows only household head's children to be matched to their mother and father).

⁹ When high school availability is excluded from the model, the "urban residence premium" increases to 10 percent, partly capturing the fact that high schools are more likely to be available in urban areas.

Table IV.7. Predictors of Continued Education after Completion of 8-Year Primary School (marginal effects from a probit regression are reported, where the dependent variable takes the value 1 if child attends school after primary level. |t|-values are in parentheses. The sample consists of children aged 15 to 17 [excluding those who are still enrolled in the primary cycle]. About 83 percent of the sample are observed attending school after the primary cycle).

	Both genders		Males		Females		Means & Std. Dev.
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	
Gender (1 if male, 0 if female)	.078 (3.63)	.068 (3.25)	-----	-----	-----	-----	.56 (.49)
Wealth Groups							
Grp 1 (least wealthy)	-----	-----	-----	-----	-----	-----	.26 (.44)
Grp 2	.067 (3.06)	.073 (3.56)	.101 (2.81)	.112 (3.20)	.074 (1.63)	.088 (2.08)	.26 (.44)
Grp 3	.120 (5.07)	.117 (5.13)	.133 (3.28)	.134 (3.31)	.203 (4.24)	.201 (4.39)	.27 (.44)
Grp 4 (wealthiest)*	.117 (4.18)	.115 (4.27)	-----	-----	.136 (2.46)	.145 (2.82)	.20 (.40)
Mother's Schooling							
No schooling	-----	-----	-----	-----	-----	-----	.28 (.45)
Some primary	.003 (0.12)	.005 (0.19)	.034 (0.81)	.027 (0.68)	-.029 (0.51)	-.017 (0.31)	.37 (.48)
Primary graduate	.051 (1.38)	.043 (1.17)	.055 (0.96)	.033 (0.54)	.068 (0.86)	.071 (0.96)	.08 (.27)
More than primary	.115 (3.11)	.099 (2.74)	.129 (2.16)	.121 (2.06)	.155 (2.22)	.124 (1.78)	.27 (.44)
Father's Schooling							
No schooling	-----	-----	-----	-----	-----	-----	.14 (.35)
Some primary	.039 (1.12)	.030 (0.87)	.040 (0.75)	.041 (0.80)	.070 (0.94)	.035 (0.47)	.15 (.35)
Primary graduate	.049 (1.55)	.036 (1.20)	.005 (0.10)	-.010 (0.20)	.127 (2.05)	.104 (1.77)	.29 (.45)
More than primary	.117 (3.13)	.102 (2.88)	.101 (1.81)	.086 (1.59)	.196 (2.69)	.169 (2.44)	.42 (.49)
Mother absent from household	-.159 (3.05)	-.158 (3.05)	-.152 (2.15)	-.156 (2.22)	-.226 (2.00)	-.238 (2.02)	.07 (.26)
Father absent from household	.048 (1.19)	.032 (0.78)	.011 (0.16)	-.009 (0.12)	.110 (1.51)	.081 (1.07)	.06 (.24)

Secondary school availability in the residential area (1 if available, 0 otherwise)	-----	.099 (4.15)	-----	.133 (3.47)	-----	.126 (2.74)	.66 (.47)
Urban residence (1 if urban, 0 if rural)	.100 (3.40)	.052 (1.91)	.011 (0.29)	-.034 (0.94)	.259 (4.25)	.209 (3.46)	.81 (.39)
Log Likelihood	-261.3	-244.2	-123.3	-116.4	-128.9	-117.7	
Sample Size	792	768	355	346	343	332	792

*All male children aged 15 to 17 coming from households that fall into the wealthiest category are enrolled in secondary school. As a result, in models 3 and 4, this category is dropped during estimation, and thus about 90 observations are not used.

Source: 2001 HCIS.

Since secondary school availability emerged as an important determinant of enrolment that can be influenced by policymakers in the short run (as opposed to parental schooling, for example), the next step is to see the extent to which certain households are disadvantaged when it comes to access to secondary school education.

Overall, there is significant room for improvement when it comes to secondary school availability. Only 64 percent of households reported that a secondary school is available in their residential area. As opposed to primary school availability, secondary school availability is correlated with household wealth: 59 percent of the poorest quarter of households reported a secondary school available in their area, while 69 percent of the wealthiest did the same. Only 50 percent of rural households reported availability, while 67 percent of urban households did so. This situation is further complicated by the presence of different types of secondary schools (many vocational secondary schools with very low student–teacher ratios) that may not be attractive to large portions of the population. Finally, Table IV.8 shows that *if a school is available in the residential area*, then the distance to the school does not vary much by urban/rural residence or by household wealth.

Table IV.8. Conditional on School Availability in the Residential Area (estimated distance (in meters) between household's residence and the closest secondary school: by urban/rural residence and by wealth. Medians and Means [in brackets]).

Access	Residence			Wealth Quintiles (based on a household possessions index)			
	Urban All	Rural		Group 1 (poorest)	Group 2	Group 3	Group 4
Secondary School	500 [733]	400 [526]	500 [703]	400 [682]	500 [733]	500 [622]	500 [786]

Source: 2001 HCIS.

Universities and the Poor

This section will not attempt to speculate on the state of universities in Turkey; our focus is on poor children who, as has been shown, are unlikely to receive even a secondary education. Public spending patterns would, of course, have direct implications for the poor, if they overwhelmingly emphasized higher education (from which the wealthier are more likely to benefit), but, as Figure IV.2 demonstrates, the distribution of resources among different levels of schooling is not particularly unbalanced (although overall public spending on education is low).

In Turkey, entrance to university is primarily based on a student's performance in a centrally administered examination; grades in secondary school are the other factor that determines the overall score. While this examination-based selection is occasionally criticized, the system itself has important positive features. Perhaps most important, is the basic characteristic that the same questions are asked of all students, and the evaluation is undertaken in a consistent and centralized manner. Having said that, selective educational systems have been shown to cause significant inequality in other developing countries (see Mete 2004). In the Turkish case, the solution to the inequality problem does not have much to do with the design of the examination; rather, it has to do with increasing the enrolment of poor children in *quality* public basic education and general (academic) secondary schools.

Some insights into the status of the few poor students who make it to the (two- or four-year) universities come from an analysis of the 1997 University Student Survey, published by the Council of Higher Education in 1998, under the title "Parental Income, Educational Expenditures, Financial Aid and Job Expectations of University Students." The survey, implemented by the State Institute of Statistics (SIS), collected information on about 80,000 students enrolled in 51 public and 7 private universities during 1996–97. The response rate was 99 percent.

The study found that students coming from high-income families are much more likely to be enrolled in private universities, and they are more likely to be enrolled in “well-established” and “new and developing” institutions. Thus, university enrolment of students coming from poor households should be interpreted with the understanding that these students do not enroll in universities of the same quality as wealthier student. Having said that, the observation that private universities tend to serve the wealthy is neither a surprise nor a negative factor in and of itself—as long as quality public universities exist with a respectable non-wealthy student enrolment. One way to relax the capacity constraint in higher education is to allow and encourage the establishment of private higher education institutions. This is exactly what is happening in Turkey.

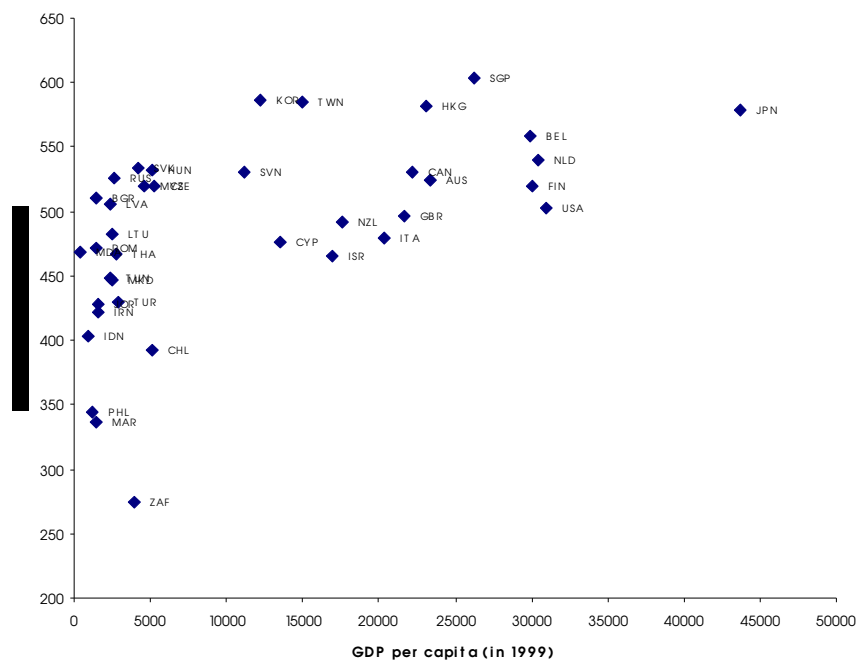
Private tutoring plays a key role in determining who attends what type of university, as acknowledged by 89 percent of the undergraduate students who view private tutoring as necessary for success in the university entrance examination. About 78 percent of all undergraduate students report receiving private tutoring (almost 90 percent of those through taking preparatory courses in private tutoring centers). As the main reason for not participating in private tutoring, 57 percent of the surveyed undergraduate students mentioned lack of economic resources, 23 percent mentioned availability of high-quality education in secondary school, and 5 percent mentioned absence of private tutoring in their neighborhood. Thus, the poverty linkage is revealed explicitly by the emergence of the lack of economic resources as a prevalent response, but also by the fact that the other common response is “availability of high-quality education at secondary school,” which this Poverty Assessment chapter shows as unlikely for poor children. Furthermore, the statistics from the 1997 University Student Survey reflect the private tutoring patterns of those students who gained acceptance to university.

The 1998 Council of Higher Education report also contains statistics on receipt of financial aid during undergraduate education. Household income status is captured by the creation of 15 income groups, which show that in public universities, 86 percent of students coming from the least-wealthy households apply for financial aid, and among those who applied, 69 percent receive aid. For the students coming from wealthiest households, the percentages are 31 and 17 percent, respectively. In private universities, the percentages for children coming from the least-wealthy households are 20 and 20 percent, respectively. For those coming from the wealthiest households, they are 20 and 17 percent, respectively. As a result, while it is true that public universities fare better in terms of having a pro-poor financial aid distribution, improvements are needed, because a significant portion of wealthy students receive financial aid while some of the least-wealthy students are denied aid.

Quality of Education (International Comparisons)

Turkey has participated in the 1999 Trends in International Mathematics and Science Study (TIMSS), along with 37 other nations. Turkey ranked 31st and 33rd in mathematics and science achievement tests, respectively, administered to eighth-grade students, out of a total of 38 countries. While these results are not encouraging, it would be more productive to view them as baselines that need to be monitored and improved over time. For one thing, the countries that participate in this examination scheme are not randomly selected. Many of them are wealthier than Turkey. Figures IV.7 and IV.8 present test scores by GDP per capita. Focusing on the countries that are in the same GDP per capita neighborhood, Turkey still ranks at below average performance though.

Figure IV.7. 1999 TIMSS Mathematics Achievement of Eighth-Grade Students



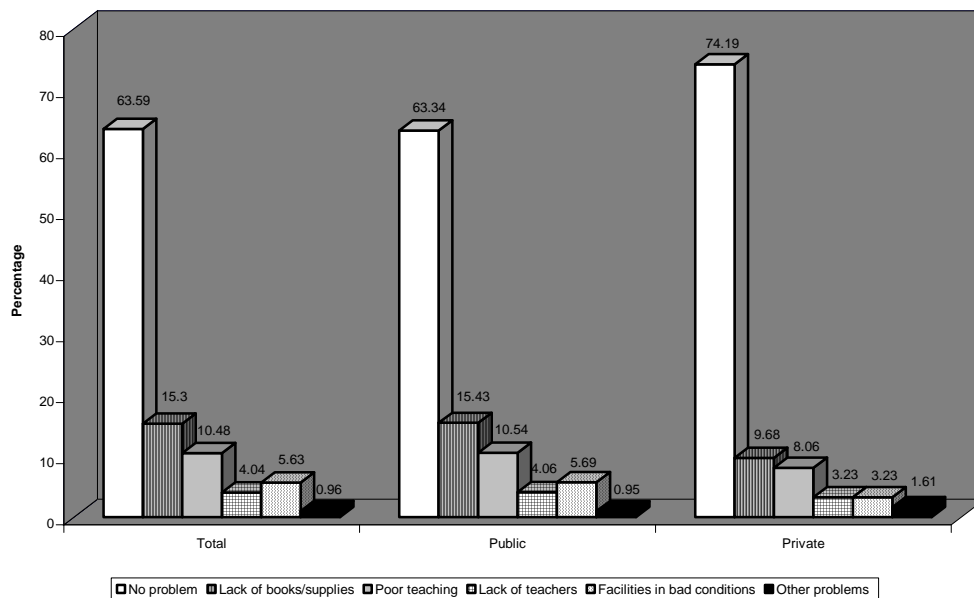
Note: Country codes: Singapore (SGP), Republic of Korea (KOR), Taiwan (TWN), Hong Kong (HKG), Japan (JPN), Belgium (BEL), Netherlands (NLD), Slovak Republic (SVK), Hungary (HUN), Canada (CAN), Slovenia (SVN), Russian Federation (RUS), Australia (AUS), Finland (FIN), Czech Republic (CZE), Malaysia (MYS), Bulgaria (BGR), Latvia (LVA), United States (USA), United Kingdom (GBR), New Zealand (NZL), Lithuania (LTU), Italy (ITA), Cyprus (CYP), Romania (ROM), Moldova (MDA), Thailand (THA), Israel (ISR), Tunisia (TUN), Macedonia (MKD), Turkey (TUR), Jordan (JOR), Iran (IRN), Indonesia (IDN), Chile (CHL), Philippines (PHL), Morocco (MAR), South Africa (ZAF).

Figure IV.8. 1999 TIMSS Science Achievement of Eighth-Grade Students

Of those household members who were attending school at the time of the 2001 HCIS, 2.3 percent attended private schools (2.6 percent in urban areas and 1.3 percent in rural areas). Among the least-wealthy quarter of households, private school attendance was 1.3 percent, and among the wealthiest quarter of households, it was 5.8 percent.

Figure IV.9 shows that household members are more likely to report problems with public schools compared to private schools. The leading problems are lack of books and supplies, reported as a problem for 15 percent of children enrolled in public schools and 10 percent of children enrolled in private schools. The next major problem, in both public and private schools, is poor teaching, which was reported in about 10 percent of cases.

Figure IV.9. Problems with Schools, Public and Private



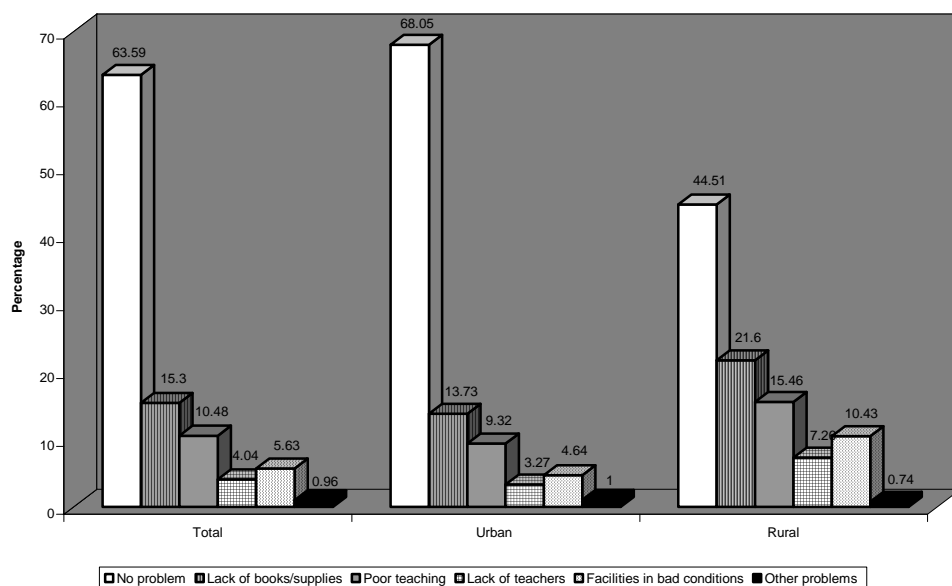
Data Source: 2001 HCIS. Based on a sample of 2,638 children enrolled in public schools and 62 children enrolled in private schools at the time of the survey.

The urban/rural differences are unequivocal (Figure IV.10). Only 45 percent of responses indicated “no problem with school” in rural areas, compared to 68 percent in urban areas. In rural schools, both lack of books/supplies (22 percent) and poor teaching

the negative side, a key issue might be what parents from different socioeconomic backgrounds consider quality education. For example, it could be that for illiterate parents, quality education means that teachers regularly show up and their children can read. Other parents might have more stringent quality criteria. There are two mediating factors here. First, the direction of the possible bias is rather obvious. If poor/uneducated parents are more likely to say that school quality is bad, then the differences between schools that serve poor/uneducated and wealthy/educated are probably even more pronounced than the survey data reveal. Second, one can interpret the results, from a rather narrow perspective, as satisfaction from received education services (rather than as a proxy for actual quality of schooling received). The differences between the replies of poor and non-poor households would still be of interest.

(15 percent) are widespread. In fact, in more than 7 percent of cases, “lack of teachers” was reported as a problem.

Figure IV.10. Problems with Schools, Urban, and Rural



Source: 2001 HCIS. Based on a sample of 2,200 children enrolled in urban schools and 537 children enrolled in rural schools at the time of the survey.

Wealthier households are much less likely to report problems with school (Table IV.9).¹¹ Complaints about lack of books and supplies decline drastically as household wealth increases. This is not surprising, since wealthier households can afford to ensure their children have the necessary books and supplies. Complaints about facilities also decline with wealth, which may suggest preferential treatment to schools located in wealthier neighborhoods (although, it may also be a result of higher informal contributions from wealthy families to the school). While complaints about poor teaching remains constant at around 10 percent for all wealth groups, complaints about “lack of teachers” declines with the wealth of households.

Table IV.9. Problems with School (percentages are reported)

	Wealth Quintiles (based on a household possessions index)			
	Group 1 (poorest)	Group 2	Group 3	Group 4
No problem	44.51	66.41	69.10	73.81
Lack of books/supplies	29.08	14.54	10.94	6.13
Poor teaching	10.39	10.68	9.19	11.79
Lack of teachers	7.42	2.83	3.01	3.06
Facilities in bad conditions	8.31	4.63	6.34	3.98
Other problems	0.30	0.90	1.43	1.23

¹¹ This trend is not driven by the relatively small percentage of households that send their children to private schools.

Total	100	100	100	100
Sample size	674	777	631	653

Consistent with the reporting of problems with schools, satisfaction with schooling is higher for private schools (Figure IV.11) and for urban schools (Figure V.12). Interestingly though, satisfaction with schooling is not that sensitive to changes in household wealth (Table IV.10).

Figure IV.11. Satisfaction with Quality of Education (based on a sample of 2,670 currently enrolled students [2,610 public and 60 private])

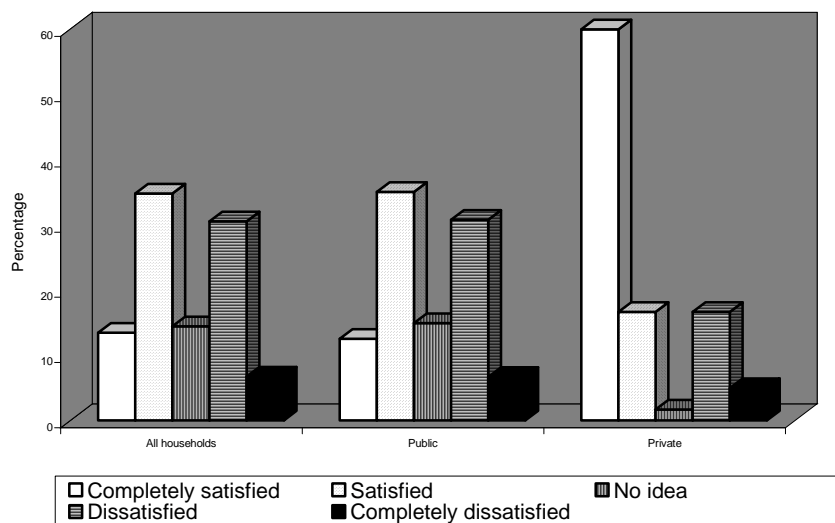


Figure IV.12. Satisfaction with Quality of Education (based on a sample of 2,733 currently enrolled students [2,200 urban and 533 rural])

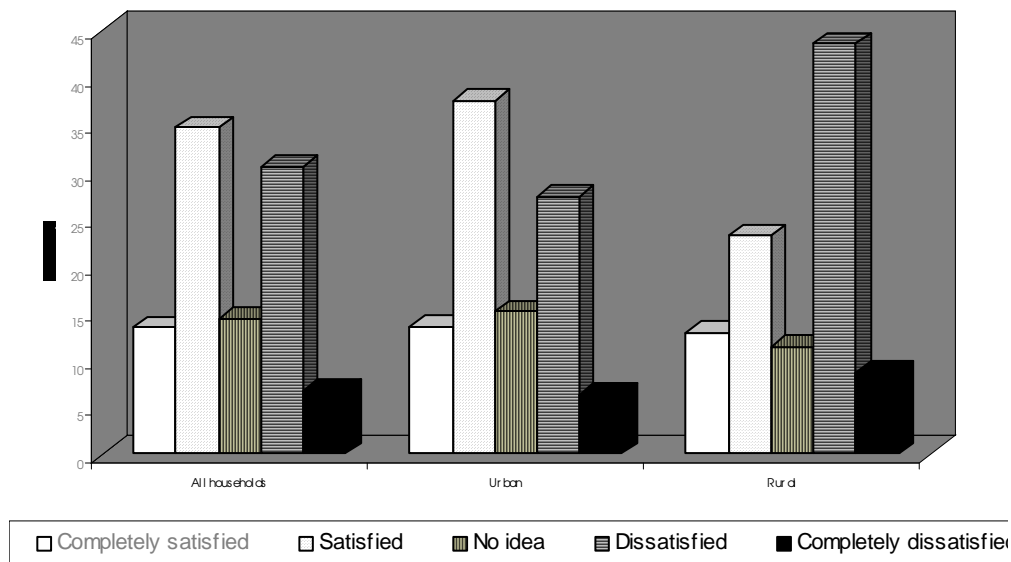


Table IV.10. Satisfaction with Quality of Education (percentages are reported)

	Wealth Quintiles (based on a household possessions index)			
	Group 1 (poorest)	Group 2	Group 3	Group 4
Completely satisfied	11.57	16.75	11.11	13.94
Satisfied	29.82	33.77	39.28	36.82
No idea	17.80	15.96	12.36	11.06
Dissatisfied	34.27	27.04	30.67	30.76
Completely dissatisfied	6.53	6.46	6.57	7.42
Total	100	100	100	100
Sample size	674	758	639	660

Household heads that reported members enrolled in school also indicated perceptions about trends in the quality of schooling. About 25 percent of household heads believed primary school service improved in the last two years, 69 percent believed it remained the same, and 6 percent believed service worsened. This time, the wealth effects are visible. About 8 percent of the poorest quarter of the households believe the service has worsened in the last two years (in contrast, only 4 percent of the wealthiest quarter of households believe primary school service has worsened). Similarly, there are differences by urban/rural residence: in rural areas over 9 percent of households felt

primary schooling quality worsened, whereas only 5 percent of urban households reported declining primary school quality.

A smaller percentage of household heads believe secondary school quality has improved in the last two years (21 percent). The differences in perceived secondary school quality are negligible among wealthy groups. Urban/rural residence also does not matter much.

V. Economic Growth and Labor Market Implications of a Public Policy that Undervalues Education

Physical capital and human capital are complements. An optimized combination of physical and human capital leads to highest economic growth: if one ingredient is too low, the other one also does not produce much.¹²

Both public and private rates of return to schooling are high, although an empirical regularity is that there is a substantial gap between public and private rates of return to higher education.¹³ Consistent with this evidence, emphasis on early levels of schooling is considered to be a key ingredient in the remarkable economic growth performance of the Asian Tigers that spans three decades (with a brief halt at the end of the 1990s)—along with generally prudent macroeconomic policies (Mingat 1998). Investment in education also has a self-reinforcing dimension in that the positive impact on economic growth translates into more resources that can be devoted to education (even if the share of public spending on education remains the same), which in turn aids economic growth and so on. Indeed, with the exception of the early decades following the foundation of the republic, Turkey's failure to invest more aggressively on early-levels of schooling has meant missed opportunities both for unschooled individuals and for the economy in general, as partially revealed by the labor market trends that are reported next.

Returns to Schooling in Turkey

As mentioned, private returns to schooling are very high in Turkey. Table IV.11 presents the results from the estimation of a Mincerian-type semi-log wage equation (Mincer 1974) using data from the 2002 Household Income and Consumption Expenditures Survey (HICES). The dependent variable is the natural log of hourly earnings. Explanatory variables are indicators for gender, potential experience (and its squared divided by 100), schooling attainment, urban residence, and region of residence. Individuals aged 25 to 64, and who report non-zero earnings in the reference month, form the sample. This section outlines key findings from this exercise.

¹² The pathways of the relationship between population's educational attainment and economic development are complex and discussed thoroughly in the literature. On the relationship between physical capital and human capital see, for example, Heckman (2003).

¹³ Various studies since then have confirmed these important findings, but the original reference is Psacharopoulos (1994).

These estimates are provided here as the basis for highlighting key trends in earnings that are of particular interest to this study. The readers who are interested in this topic should also refer to Dayioglu and Tunali (2004), who carry out a more elaborate investigation of the determinants of earnings (but the main trends discussed here are consistent with their findings) by using data from 1988 and 1994 in addition to 2002, by employing Oaxaca-Blinder wage gap decomposition to better illustrate gender inequalities, by including provincial variables (such as share of manufacturing, trade), and so forth.

On average, males earn 45 percent more per hour than females of similar characteristics. Schooling has a robust, positive, and large impact on earnings. Vocational junior secondary school graduates earn more than general junior secondary school graduates; similarly vocational secondary school graduates earn slightly more than general secondary school graduates. There are a number of selectivity issues that hinder a clear-cut interpretation of these estimates. For example, one could argue that because “more able” general secondary graduates continue their education at the university level, the observed returns to general secondary education are underestimated. On the other hand, one could also claim vocational school students are disadvantaged in terms of family contacts or other unobserved characteristics that depress the distribution of their earnings.

When separate models are estimated for males and females, we see that the coefficients for secondary and higher education are much larger for females. As discussed, on one hand, females earn less than males of similar characteristics in the labor market. But on the other hand, the impact of schooling on earnings is even more visible for females. A final issue that deserves emphasis is the gender distribution of those who reported non-zero earnings in the reference month: 85 percent of this group is male. These findings are supportive of the literature that argues that payoffs to educating girls are at least as high as to educating boys, especially in countries like Turkey, where the gender gap in schooling is significant—because social rates of return decline with schooling. Other reasons for emphasis on girls’ schooling include the close linkage between a mother’s schooling and children’s health and education, and the empirical regularity that more educated women are more likely to participate in the labor force, thus broadening the tax base (Schultz 2002).

Table IV.11. Ordinary Least Squares Estimates of Log-Hourly-Earnings. (|t|-statistics are in parentheses; individuals aged 25 to 64 are included in the sample)

	Both Genders	Males	Females	Means and Standard Deviations
Gender (1 if male, 0 if female)	.449 (12.3)	-----	-----	.848 [.359]
Potential Experience	.048 (9.14)	.057 (10.1)	.042 (2.95)	24.4 [10.8]
Potential Experience Squared (1/100)	-.081 (8.76)	-.096 (9.54)	-.085 (3.35)	
Schooling Attainment No diploma	-----	-----	-----	.080 [.271]
Primary	.401 (7.29)	.354 (5.53)	.154 (1.24)	.483 [.499]
Junior Secondary	.682 (10.2)	.625 (8.41)	.398 (1.88)	.113 [.316]
Vocational Junior Secondary	1.05 (5.26)	.929 (4.69)	2.02 (1.54)	.004 [.066]

Secondary	.986 (14.8)	.889 (11.9)	1.11 (6.52)	.134 [.341]
Vocational Secondary	1.07 (13.9)	.967 (11.4)	1.29 (6.23)	.061 [.239]
Higher Education	1.59 (23.5)	1.40 (18.1)	1.86 (11.3)	.125 [.331]
Urban Residence	.192 (6.66)	.144 (4.72)	.368 (4.41)	.703 [.457]
Regions				
Marmara	-----	-----	-----	.261 [.439]
Aegean	-.148 (3.39)	-.166 (3.56)	-.080 (0.69)	.126 [.331]
Mediterranean	-.028 (0.63)	-.005 (0.11)	-.162 (1.28)	.118 [.322]
Central Anatolia	-.209 (5.22)	-.154 (3.65)	-.470 (4.13)	.162 [.369]
Black Sea	-.063 (1.36)	-.019 (0.40)	-.313 (2.37)	.107 [.309]
Eastern Anatolia	-.084 (1.96)	-.070 (1.57)	-.189 (1.39)	.134 [.341]
South Eastern Anatolia	-.212 (4.22)	-.183 (3.57)	-.493 (2.75)	.092 [.290]
R squared	0.15	0.11	0.28	
Sample Size	8226	6976	1250	8226

Source: 2002 HICES.

Unemployment by Schooling Attainment

The evolution of unemployment rates over time is shown in Figure IV.13, separately for males and females, and for younger individuals. Figures IV.13 to IV.21 display unemployment rates by schooling attainment. The data for these figures come from the State Statistics Institute (original data source is the 1990-2003 Labor Force Surveys).

Figure IV.13 shows that (a) since 2000, unemployment rates have been on the rise; (b) youth unemployment rates are significantly higher than overall unemployment rates; and (c) the probability of unemployment is higher for males in recent years, especially among the youth.

While each of the remaining figures could be discussed separately, for brevity, three issues will be mentioned here. First, the female unemployment rate is higher among (vocational and general) secondary school graduates. Second, the unemployment rate among vocational secondary school graduates tends to be at about the same level as the unemployment rate among general secondary school graduates—in fact, in some cases vocational school graduates are much more likely to be unemployed. Third, those with higher education diplomas are unique in that there is a clear distinction between their overall unemployment rates (low compared with others in the sample) and youth

unemployment rates (very high at around 35 percent). Since this trend has persisted since 1990, one explanation is the possibility that reservation wages are higher for recent higher-education graduates, such that they are more selective when it comes to accepting jobs, compared to less-educated individuals. But overall unemployment rates are lower, as one would expect—skilled individuals have more opportunities in the labor market, and this effect seems to dominate other factors (such as differences in reservation wage) eventually when it comes to determining observed unemployment rates. Finally, among individuals who have completed higher education, the female unemployment rate is much higher, despite the lack of a gender difference among the younger cohorts. This is a finding for which we have no explanation at this stage.

Figure IV.13. Unemployment Rates Over Time

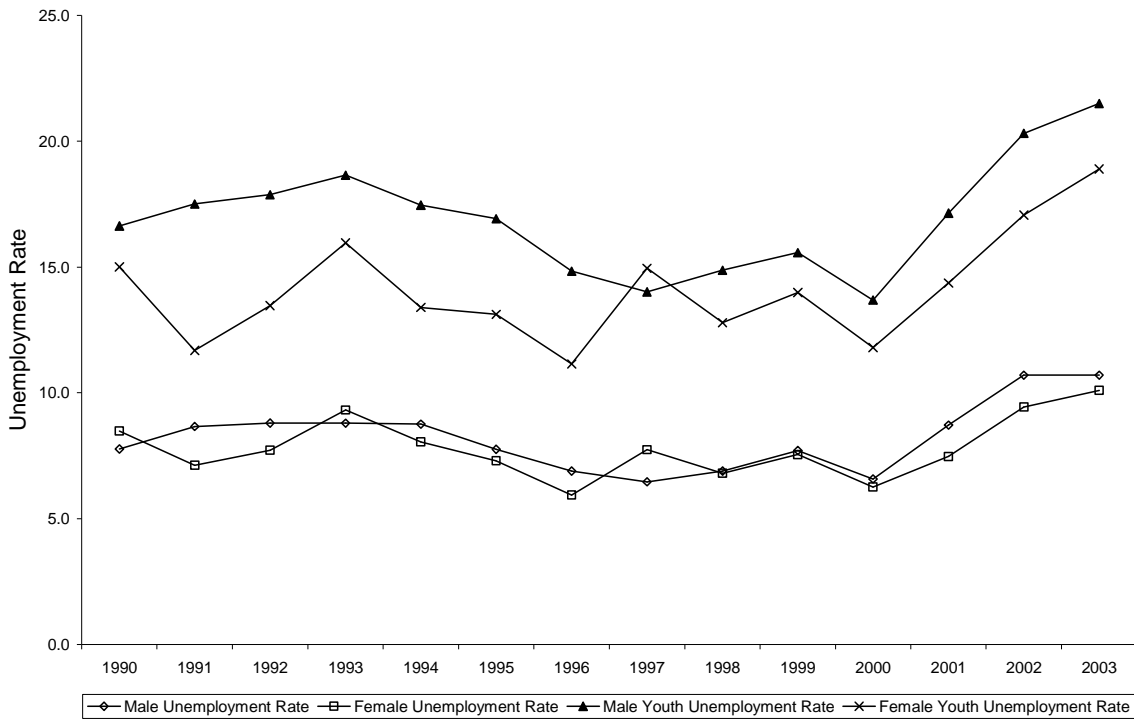


Figure IV.14. Illiterate Unemployment Rates Over Time

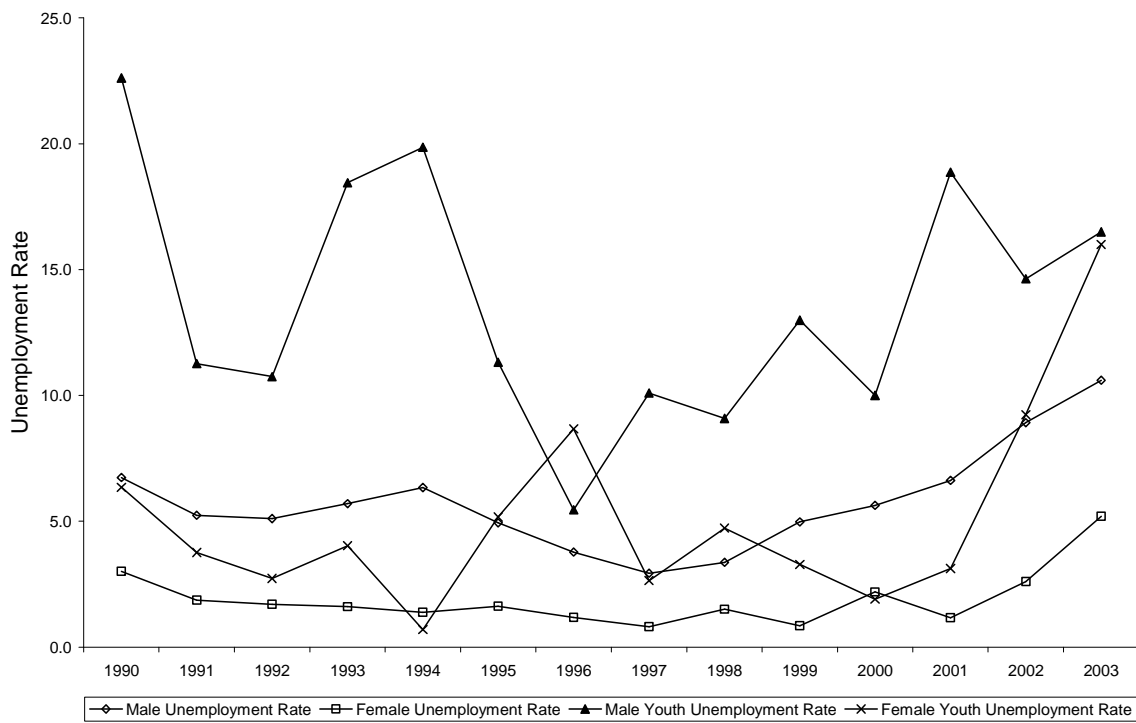


Figure IV.15. Literate without Diploma Unemployment Rates Over Time

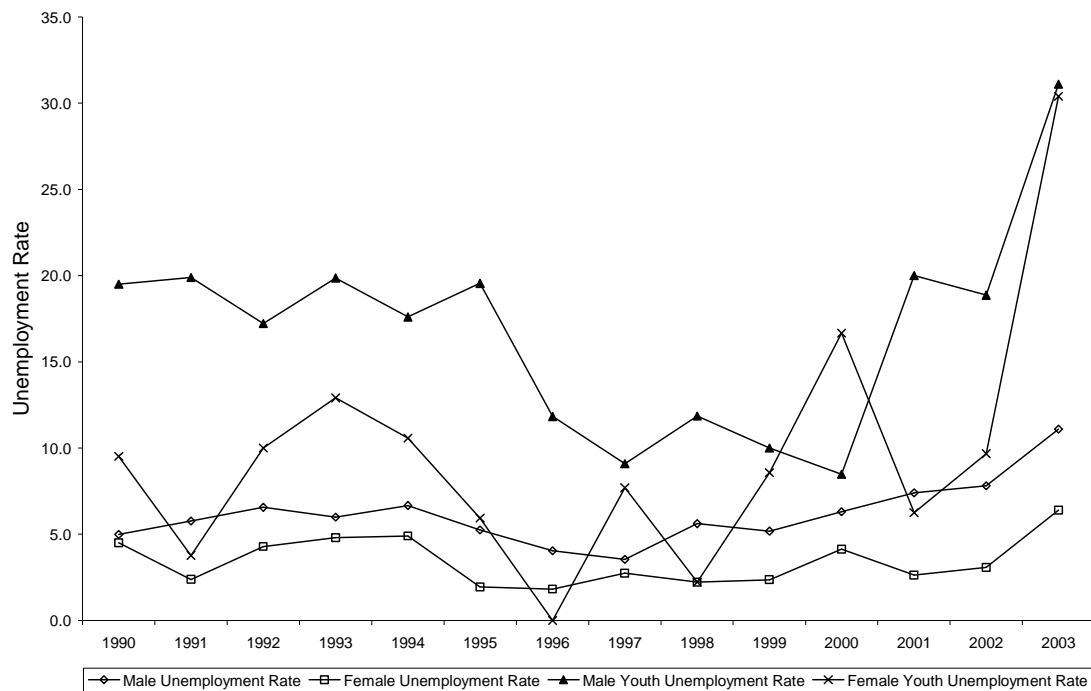


Figure IV.16. Primary School Graduates' Unemployment Rates Over Time

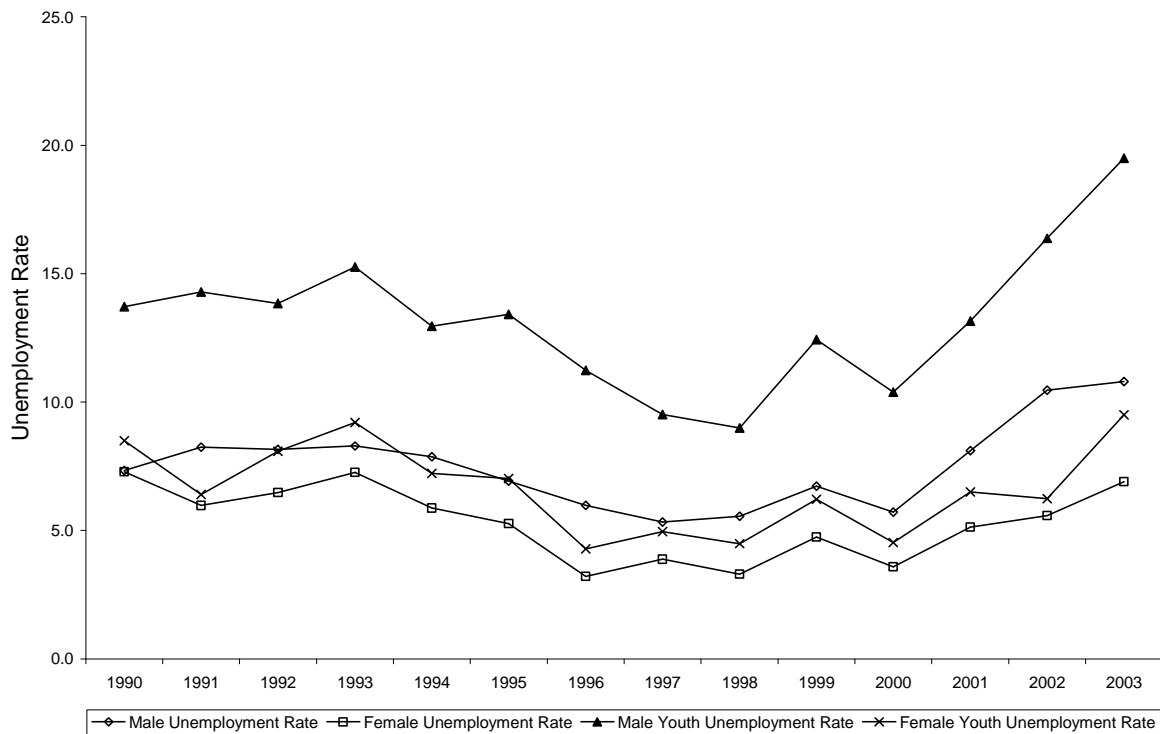


Figure IV.17. Junior Secondary Graduates' Unemployment Rates Over Time

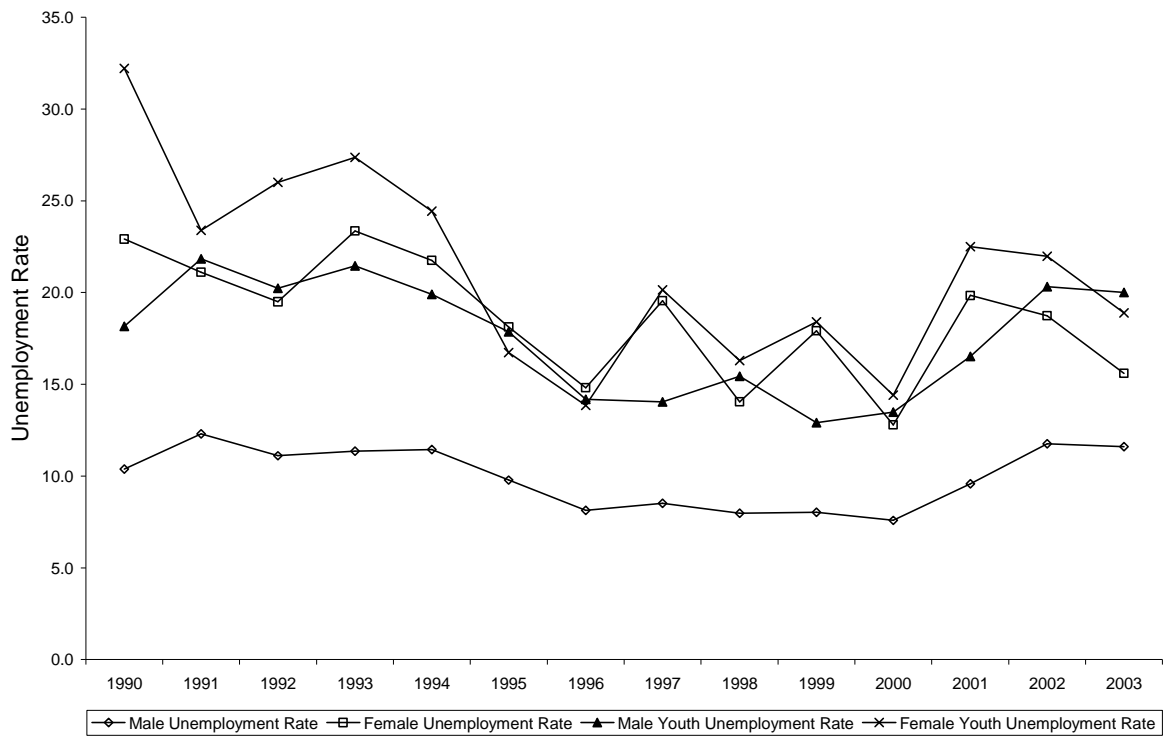


Figure IV.18. Vocational Junior Secondary Graduates' Unemployment Rates Over Time

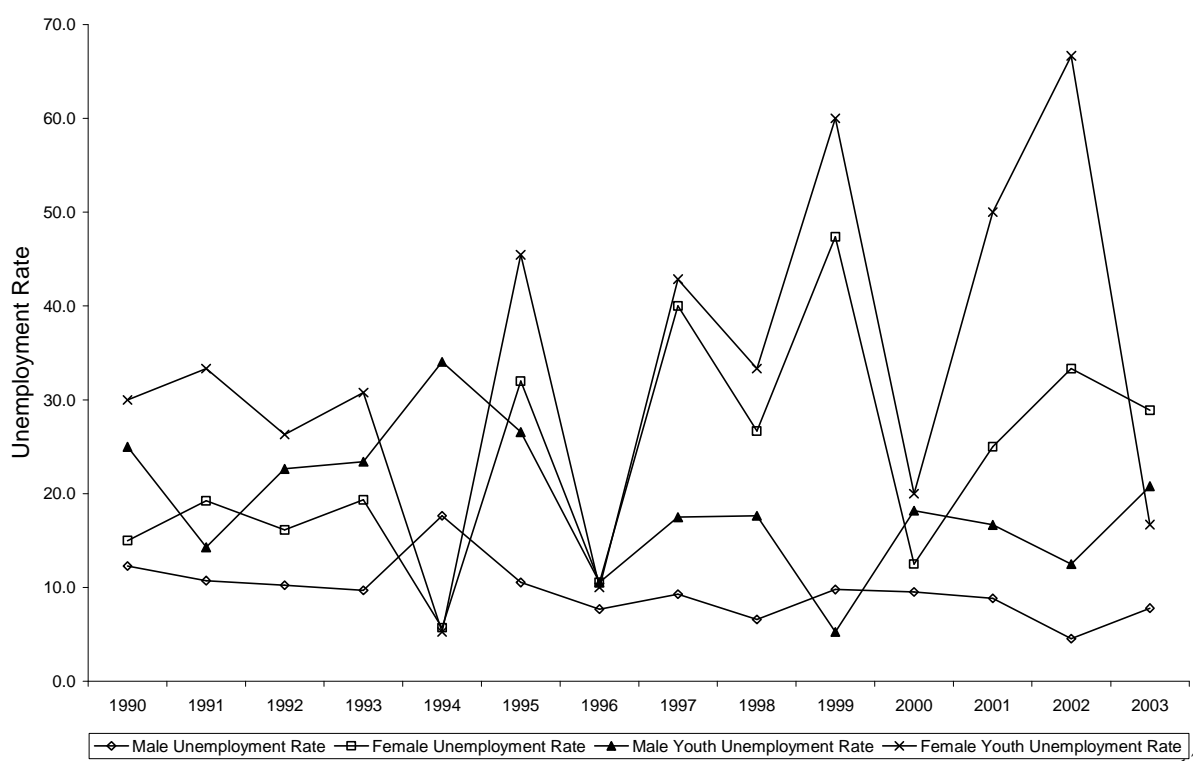


Figure IV.19. Secondary School Graduates' Unemployment Rates Over Time

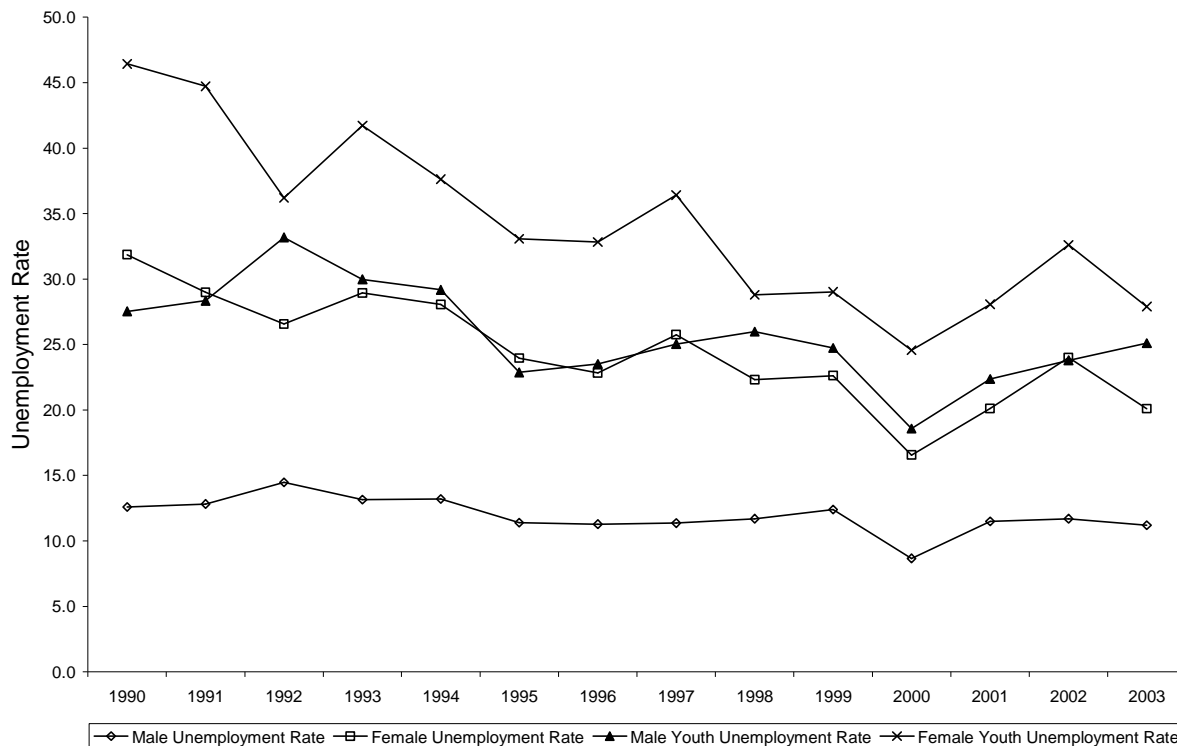


Figure IV.20. Vocational Secondary School Graduates' Unemployment Rates Over Time

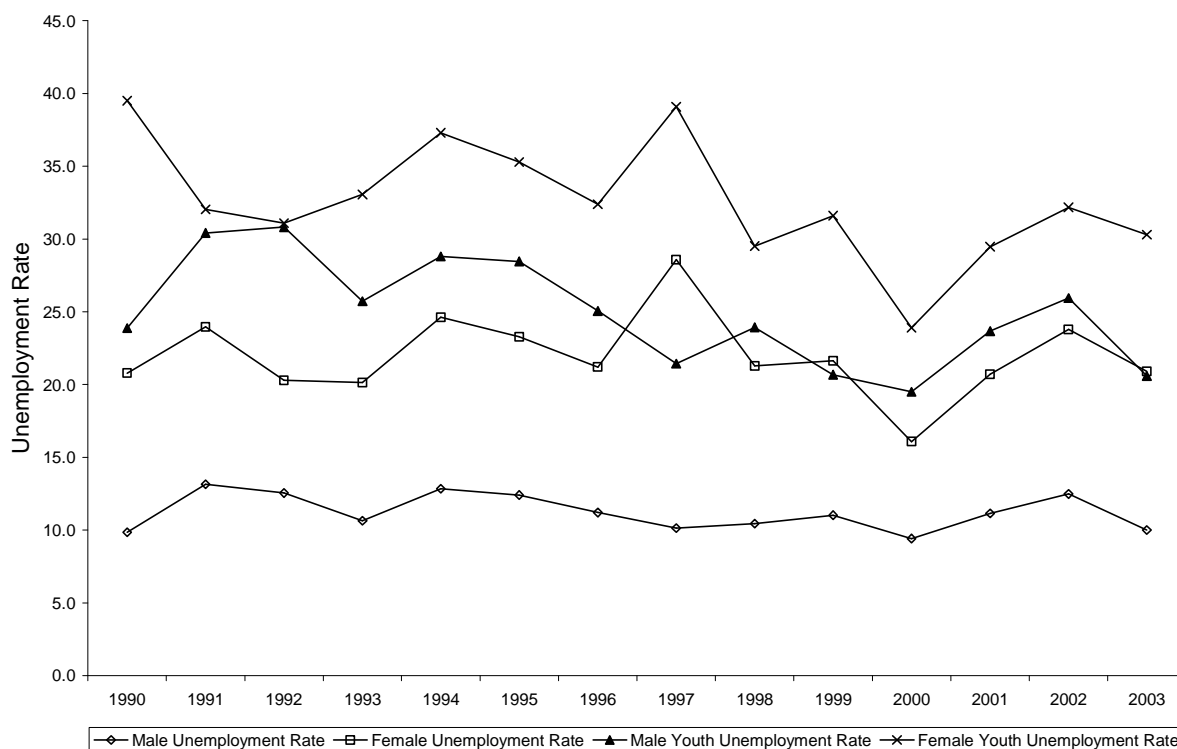


Figure IV.21. Higher Education Graduates' Unemployment Rates Over Time

