PROVINCIAL INEQUALITIES IN SCHOOL ENROLLMENTS IN TURKEY*

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Working Paper 2003

*Acknowledgements: Thanks are due to Nil Demet Gungor, who kindly read and commented upon a preliminary version of this paper.

Abstract

The main objective of this paper is to provide evidence on the extent of the wage differential between general and vocational high school graduates who do not go on to higher education. School selection is modeled with a three-way multinominal logit model. Selectivity corrected wage equations are estimated for general and vocational high school graduates. Oaxaca-Blinder decomposition of the wage differential is performed. Analysis is carried out for males and females separately. Individual level data from 1994 Household Expenditure Survey conducted by the State Institute of Statistics are used in the analysis. The main finding is that when controlled for observed characteristics and sample selection, for men, wages of vocational high school graduates are larger than those of the general high school graduates. It was not possible to make a comparison for women due to poor wage equation estimates for vocational high school female graduates. Second, lower unemployment rates are observed among vocational high school graduates than among general high school graduates for both men and women. Third, for men, private returns to vocational high schooling are higher than general high schooling. Thus, labor market outcomes in terms of private rates of return to schooling, unemployment rates and wages favor vocational high schools than general high schools.

1. Introduction

The positive impact of education on economic growth and development is well known. There are numerous ways in which investment in education benefits development, ranging from human capital formation and increased income growth to the increased well being of populations. Numerous cross-country studies of schooling have assessed enrollment levels and changes as an indicator not only of the progress made in current well being but also as an indicator of future increases in income.

Schooling, then, has long been recognized as important to economic development. However, while numerous studies have been done to investigate inequalities in schooling across countries, there is a dearth of such applied works on inequalities in schooling and enrollment rates across Turkey's provinces. The objective of this work, then, is to provide a nearly fifteen-year perspective on schooling inequalities at the provincial level for Turkey. For this purpose, two provincial inequality indexes in school enrollments are computed for the years 1980 and 1994 using primary, middle and high school enrollment rates for the provinces of Turkey. The interprovince index is a measure of inequality in enrollments across Turkey's provinces and the intraprovince index is a measure of inequality in enrollments across the primary, and secondary school levels within each province. Separate indexes are computed to measure inequalities in female schooling in each year.

These summary measures of inequality in provincial enrollments at the various levels of schooling are a particularly convenient way of developing perspective about schooling inequalities across and within provinces and about the changes in these inequalities. Changes in the interprovince inequality index is looked at over time for each level of schooling and the total and female inequality indexes are compared. Significant results include decreases in the interprovince inequality index for the primary and middle school levels in 1994 relative to 1980, suggesting "convergence" in enrollment rates at these levels of schooling. At the high school level, however, increase is seen in the interprovince inequality index for 1994 relative to 1980. Finally, interprovince and intraprovince inequalities in female enrollment rates are found to be substantially larger than those for total enrollment rates at all levels.

The descriptive results obtained from the indexes are given a closer analytical look in the final part of the paper. In particular, "convergence" in enrollment rates is tested for at the primary and secondary school levels using a simple regression model adapted from that used to test for income convergence. The determinants of

intraprovince inequalities are also investigated by estimating regressions in which inequalities in enrollments across the primary and secondary school levels in each province are explained by provincial per capita income and rural share variables. These variables represent, respectively, demand or fiscal restrictions and structural factors within each province. Significant results for interprovince inequalities in schooling include the results of "convergence" in enrollment rates at the primary and middle school levels, which corroborates the result of declining inequality across provinces at these levels of schooling. Significant results for intraprovince inequalities in schooling include the finding that per capita income and degree of rurality of each province are important determinants of crosslevel inequalities in each province. However, it is also found that the rural-urban differential continues to be of significance only for intraprovince inequalities in female enrollment rates in 1994.

The outline of the paper is as follows. Sections 2 and 3 summarize the methodology and the data. Section 4 presents the main results. Section 5 gives the conclusions.

2. Methodology

The measure used here to compute inequality in school enrollments across Turkey's provinces is Bourguignon's (1979) "L". This measure, originally proposed to represent cross-country income inequality, was adapted by Ram (1995) to compute inequality in school enrollments across countries. As shown by Bourguignon and noted by Ram, "L" possesses properties that make it an ideal measure of inequalities in enrollments as well as in income. These properties include differentiability, additive decomposability, zero-homogeneity in incomes, and satisfaction of the Pigou-Dalton condition. The decomposability property is a very convenient one in that it allows the total population to be expressed as the sum of the inequality measures within its subgroups and as such helps identify the sources of inequality in a given population. The zero-homogeneity condition ensures that the inequality index is neutral with respect to a scale change of the whole income distribution. Satisfaction of the Pigou-Dalton condition is just the requirement that an income transfer from the rich to the poor should decrease the inequality index. (Bourguignon, 1979).

Following the methodology of Ram (1995), Bourguignon's "L" is used here to compute inequalities in school enrollments across and within Turkey's provinces. Specifically, two indexes are computed. The first is an interprovince inequality index to measure inequalities in schooling across Turkey's provinces and the

second is an intraprovince inequality index to measure inequalities in access to education within provinces.

The interprovince inequality index is computed here to measure inequalities in enrollments across Turkey's provinces at the primary, middle and high school levels. This measure is defined as

$$L = \sum_{i=1}^{N} p_i \ln(p_i / y_i) \qquad (1)$$

where p_i denotes the share of province i in Turkey's total school-age population for the primary, middle or high school level, y_i denotes province i's share in total enrollments at that level, and N denotes the total number of provinces. In the present context, "L" takes into account enrollments and school-age population for each school level and as such is a population-weighted index of enrollment inequality.

The intraprovince inequality index is computed to measure inequalities in enrollments across the primary, middle and high school levels within each province. This measure is defined as

$$L_i = \sum_{j=1}^{3} p_{ij} \ln(p_{ij} / y_{ij}) \qquad (2)$$

where p_{ij} is share of school level j in total school age population in province i; y_{ij} is share of school level j in total enrollments in province i. For example, in computing the intraprovince inequality index for the province of Adana, one would compute the relative shares of Adana's primary, middle, and high school age populations in Adana's total school-age population for the three levels of schooling. One would also compute the share of each school level in total enrollments at the three levels of schooling in Adana.

The "L" index is a convenient summary measure of inequality that is easy to interpret. A value of zero for each of the above indexes would represent perfect equality since L's lower bound is zero. A value of one for the index would show high inequality although the index does not have an upper bound.

The two schooling inequality indexes are computed for Turkey's provinces for the years 1980 and 1994. The purpose is to develop a nearly fifteen-year perspective on schooling inequalities across and within provinces. The inequality indexes are computed using total and female enrollment rates for the provinces for each year.

Changes in the interprovince inequality index are looked at over time for each level of schooling and the total and female inequality indexes compared.

Finally, the descriptive results obtained from the two indexes computed for provincial schooling inequalities are given a closer analytical look. Specifically, the result of declining enrollment inequality at the primary and middle school levels is further analyzed by testing for educational "convergence" at these levels of schooling. Following Ram (1995), "beta convergence" in enrollment rates across provinces is tested for at the primary, middle and high school levels using a simple regression model adapted from that used to test for income convergence. Beyond testing for beta convergence, sigma convergence is also tested for at the primary, middle and high school levels by comparing the standard deviations of the sample of total, male and female enrollment rates at each school level for the years 1980, 1985, 1990 and 1994. Finally, panel data estimation is used to test for convergence by pooling enrollment rate data across Turkey's provinces and over the four years in question.

The determinants of intraprovince inequalities in schooling (inequalities in access to education across the primary, middle and high school levels) are also investigated. Regressions are estimated in which the intraprovince inequalities are explained by provincial per capita income and rural share variables that represent, respectively, demand or fiscal restrictions and structural factors that may affect crosslevel inequalities in schooling. Separate regressions are estimated to investigate the determinants of intraprovince inequalities in female schooling. Further details of this part of the analysis are provided in Section 4, which presents the empirical results.

3. Data

The data used in this study is that calculated in Gungor (1997) for 65 Turkish provinces for the years 1980 and 1994. Data on enrollments, per capita income and rural share are taken, or otherwise calculated, from various State Institute of Statistics sources. The creation of new provinces after 1980 necessitated adjustments to provincial data at the subdistrict level. For this reason, data is included for 65 provinces of Turkey, one of which is a composite province in both years.

The enrollment data used here are the gross enrollment rates that were calculated in Gungor (1997) for the years 1980 and 1994 using State Institute of Statistics data for enrollment numbers and for age group populations (SIS, 1980, 1983, 1984a, 1984b, 1987a, 1987b, 1988, 1990a, 1990b, 1996b, 1997a, 1997b). Gross

enrollment rates were calculated in this source for the reason that enrollment numbers by age, required to calculate net enrollment rates, are not available for Turkey for 1980.[1]

Provincial data for constant per capita income and rural share are taken from the State Institute of Statistics (SIS, 1996a, 1996c). Since constant per capita income figures do not exist at the provincial level for 1980, the data used here is that calculated in Gungor (1997) using the current GDP figures and the method given in Ozotun (1988). Further details of the computations and the enrollment rates themselves can be found in Gungor (1997).

4. Empirical Results

4.1 Analysis of Provincial Inequality Indexes

Table 1 shows the results for interprovince inequality in enrollments at the primary, middle, and high school levels. Results are given for two years, 1980 and 1994, and have several noteworthy aspects.

First, according to the interprovince index, inequality in enrollments was lowest at the primary school level and higher at the middle and high school levels in both years. The relatively low level of inequality in enrollments at the primary school level is an expected result since primary schooling is compulsory in Turkey.[2]

Second, except at the high school level, inequality in enrollments declined between 1980 and 1994. At the primary school level, the inequality index fell from 0.017 in 1980 to 0.007 in 1994, constituting a decline of about 58 %. Similarly, at the middle school level, the inequality index fell from 0.058 in 1980 to 0.041 in 1994, constituting a decline of about 29 %. The decline in overall inequality at the primary and middle school levels is consistent with increased enrollment rates at these levels in all provinces between 1980 and 1994.

At the high school level, however, the value of the inequality index remained the same at 0.059 in 1994 relative to 1980. These results are further investigated in

[1] The gross enrollment rate is defined as the total enrollment at a school level, regardless of age, expressed as a percentage of the age group population corresponding to that school level. The net enrollment rate is defined as the enrollment at a school level of children who are of the officially-designated age for that level, expressed as a percentage of the age group population corresponding to that school level. It is generally noted that the net enrollment rate is a better measure of investment in schooling because it excludes those who are repeating grades.

[2] Compulsory schooling was extended to cover the middle school level in August 1997.

the following section, which presents the results of regressions that were estimated to test for convergence in enrollment rates across Turkey's provinces.

Third, consideration of the sample statistics such as sample range, mean, and standard deviation is very relevant here since the computed indexes of inequality for Turkey's provinces have rather low values at all levels of schooling. It can be seen from Table 1 that for 1994, the gross enrollment rate at the middle school level varied from a low of 28.7 percent to a high of 101.5 percent. This is a very sizable dispersion, as also indicated by the standard deviation of 16.5 percentage points. At the high school level, as well, the gross enrollment rate varied from a low of 18.1 percent to a high of 85.8 percent, and the standard deviation, at 15.2 percent, was also large.

Fourth, the results indicate substantially higher female enrollment inequalities than those found for total enrollments at all levels of schooling. The difference between total and female inequalities is especially large at the high school level for 1994. However, the results also indicate that, especially at the primary school level, there are substantial declines in crossprovince inequalities in female enrollment rates. At the primary school level, the inequality index fell from 0.048 in 1980 to 0.013 in 1994, which indicates a substantial decrease of about 73 %. At the middle school level, the inequality index fell from 0.147 to 0.097—a decrease of about 34 %. At the high school level, the inequality index fell from 0.170 to 0.154, which indicates a decrease of about 9 %. The results for reduced female enrollment inequality are consistent with reduced inequality in overall enrollment rates across provinces. However, these results do not consider changes in the gender gap in enrollments (in female inequalities relative to male inequalities) between the two years.

Finally, great variation is seen in the intraprovince inequality indexes computed for Turkey's provinces. Table 2 gives intraprovince enrollment inequality indexes computed for 65 Turkish provinces. It can be seen from the table that the inequality index for 1980 ranges from a low of 0.083 for the province of Izmir to a high of 0.317 for the province of Sinop. For females, the 1980 index ranges from a low of 0.090 for Istanbul to a high of 0.794 for the province of Gumushane. The index values for 1994 range from a low of 0.004 in Ankara to a high of 0.193 for the eastern province of Agri. For females, the index values for 1994 range from a low of 0.008 for Ankara to a high of 0.483 for Agri. These patterns are expected since the eastern provinces are well behind in schooling investments relative to the western provinces.

Several further points should be noted. First, there was decline in intraprovince interlevel inequality in all provinces between 1980 and 1994. However, provinces experienced substantial variations in the decline in interlevel inequality between the two years. Finally, intraprovince inequality in female enrollments was higher than that in total enrollments in all cases.

4.2 Regression Analysis

In this section the descriptive results obtained from the provincial inequality indexes are given a closer analytical look. Following Ram (1995), "beta convergence" in enrollment rates across provinces is tested for at the primary, middle and high school levels using a simple regression model adapted from that used to test for income convergence. Beyond testing for beta convergence, sigma convergence is also tested for at the primary, middle and high school levels by comparing the standard deviations of the sample of total, male and female enrollment rates at each school level for the years 1980, 1985, 1990 and 1994. Finally, panel data estimation is used to test for convergence by pooling enrollment rate data across Turkey's provinces and over the four years in question.

4.2.1 Beta convergence

The result of declining enrollment inequality across provinces at the primary and middle school levels appears to suggest that provinces are "converging" in enrollments at these levels of schooling. At the high school level, however, the value of the interprovince inequality index for 1994 remains unchanged relative to that for 1980. The rationale for testing for convergence in enrollment rates is not as apparent as in the case of income convergence. Interprovince convergence in enrollment rates may be possible over time, implying a decline in interprovince enrollment inequality. However, if improvements in enrollments are larger in provinces that already have higher enrollment rates relative to other provinces, then we may observe divergence (Ram, 1995).

Table 3 presents the results from a simple regression model estimated using enrollment rates that has been adapted from that used to test for income convergence. The basic model used is:

$$\ln(ENR94/ENR80)_{ij} = a_j + b_j \ln(ENR80)_{ij} + u_{ij} \qquad (3)$$

where ENR94 and ENR80 represent enrollment rates at school level j in province i in the years 1980 and 1994. The dependent variable, which is the natural logarithm of the ratio of enrollment rates in 1980 and in 1994, indicates the

proportionate change in enrollment rates between the two years. Convergence is indicated by a negative sign on b. This means that provinces with higher initial enrollment rates will experience a smaller proportionate change in enrollment rates.

The results from Table 3 appear to suggest that there is convergence in enrollments at the primary, middle and high school levels, as may be inferred from the negative sign on the lagged enrollment variable. Moreover, the estimated coefficients indicate that the rate of convergence is faster at the primary school level than for the middle school level. The convergence regression for the high school level is insignificant overall, as indicated by the value for the R square and by the F-statistic.

4.2.2 Panel data estimation results for convergence

Table 5 shows the panel data estimation results for the convergence equations. These results are similar to that obtained from the tests done for beta convergence at the primary and middle school levels. The estimated coefficients of the lagged enrollments in the primary and middle school regressions are negative, indicating convergence in total, male and female enrollments at these school levels between 1980 and 1994. The estimated coefficient of the lagged enrollments in the high school regression is positive for total, male and female enrollments at this school level. However, the values for the adjusted R square in the high school regressions are negative, indicating a poor fit. Hence, the results for the high school level are inconclusive.

4.2.3 Sigma convergence

Table 4 shows the standard deviations in enrollment rates for the primary, middle and high school levels for the years 1980, 1985, 1990, and 1994. A decrease in standard deviation over time indicates sigma convergence. Figures 1-3 show plots of standard deviations at different levels of schooling over time.

If the standard deviations of the sample of primary school enrollments are compared for the years 1980 and 1994, a decline may be seen in the standard deviation for total, male and female enrollments. This result may be interpreted as corroborating the beta convergence result in enrollments at the primary school level between the two years. However, the primary school results also indicate an increase in the standard deviation for total and female enrollments after 1990, and an increase in the standard deviation for male enrollments after 1985, indicating divergence for these cases.

The standard deviations for the middle school level show a decline for total, male and female enrollments in each consecutive year. This result also appears to corroborate the finding of beta convergence in enrollments at the middle school level between 1980 and 1994.

At the high school level, the results show an increase in the standard deviation for total enrollments between 1980 and 1994, indicating divergence. However, the high school results also show a decline in the standard deviation for total and male enrollments in each consecutive year after 1985, indicating convergence. For females, there is an increase in the standard deviation in enrollments in each consecutive year after 1985, indicating divergence. Therefore, at the high school level sigma convergence does not indicate clear-cut results.

4.2.4 Estimated results from tests done for intraprovince inequalities

The determinants of intraprovince inequalities in schooling (inequalities in access to education across the primary and secondary school levels) are also investigated. Table 6 gives the estimated results from regressions in which intraprovince inequalities are explained by provincial per capita income and rural share variables that represent, respectively, demand or fiscal restrictions and structural factors that may affect crosslevel inequalities in schooling. Separate regressions are estimated to investigate the determinants of intraprovince inequalities in female schooling. The basic regression equation is:

$$INTRA_i = a + b\ RY_i + c\ RURAL_i + v_i \qquad (4)$$

where INTRA is the intraprovince inequality, RY is the real provincial GDP per capita, and RURAL is the provincial rural share. The dependent variable in regressions estimated for intraprovince inequalities in female schooling is seen as INTRAF in Table 6.

However, an intuitively simpler measure of "access to education" within each province might be an index of equality that is the ratio of the enrollment rate at the secondary school levels to that at the primary school level. Alternative regressions are also estimated using this equality index as the dependent variable. The basic regression equation is:

$$TRATIO_i = a + b\ RY_i + c\ RURAL_i + v_i \qquad (5)$$

where TRATIO is the ratio of the enrollments at the secondary school level to that at the primary school level, and RY and RURAL are as explained above. Again, separate regressions are estimated using female enrollment rates; in these

regressions, the dependent variable is FRATIO, which is the ratio of female secondary school enrollments to female primary school enrollments.

As can be seen from Table 6, the coefficients for the per capita income and rural share variables have the expected signs and are mostly statistically significant. For the inequality measures, the sign of the coefficient for the per capita income variable is negative, indicating that inequality declines as per capita income increases. The sign of the coefficient for the rural share variable is positive, indicating that inequality increases with rural share. For the equality measures, there is a positive sign for the per capita income variable and a negative sign for the rural share variable as expected.

The size of the estimated coefficient for the RURAL variable indicates that provincial rural share has a larger effect than income on enrollment inequalities across the primary, middle and high school levels in each province for both years. However, the results for the R square also indicate that the explanatory power of the model is better in the 1980 regressions than in the regressions for 1994. Moreover, the relevant t-statistics indicate that, for 1994, the rural share variable is significant in only the regression estimated for female equalities across the primary and secondary school levels (measured by FRATIO94).

The results can be summarized in this way. First, all coefficients have the expected signs. Second, the t-statistics indicate that per capita income is significant for intraprovince inequalities in all regressions; however, the size of the coefficient for income indicates that the effect of income is relatively small. Third, the rural share variable is significant in all 1980 regressions. For 1994, the rural share variable is significant in only the regression estimated for female equalities across the primary and secondary school levels.

5. Conclusions

In this study, provincial inequality indexes in school enrollments were computed for the years 1980 and 1994 using primary, middle and high school enrollment rates for the provinces of Turkey. Summary measures of both interprovince and intraprovince inequality were computed for the two years; the former measure is an indicator of inequality across provinces, and the latter measure is an indicator of inequality in "access to education" within provinces. A nearly fifteen-year perspective was developed on schooling inequalities across Turkey's provinces at the primary, middle and high school levels. Intraprovince inequalities across the primary, middle and high school levels were also investigated over the same period of time.

Several main points were noted. First, as expected, inequality in enrollments across provinces was lowest at the primary school level since primary schooling is compulsory. Second, except at the high school level, inequality in enrollments declined between 1980 and 1994. Third, inequalities in female enrollment rates were substantially larger than inequalities in total enrollment rates at all levels. Fourth, the results for "convergence" models explaining interprovince changes in enrollment rates indicate convergence at the primary and middle school levels. Fifth, per capita income and degree of rurality of each province are important determinants of intraprovince inequality. However, it is also found that the rural-urban differential continues to be of significance only for intraprovince inequalities in female enrollment rates in 1994.

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Figure 1: Standard Deviations of the Log of Primary School Enrollments Over Time

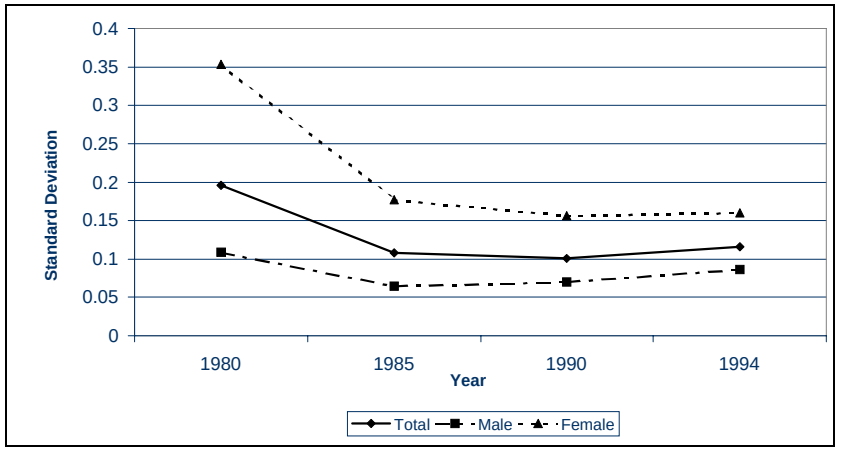

Figure 2: Standard Deviations of the Log of Middle School Enrollments Over Time

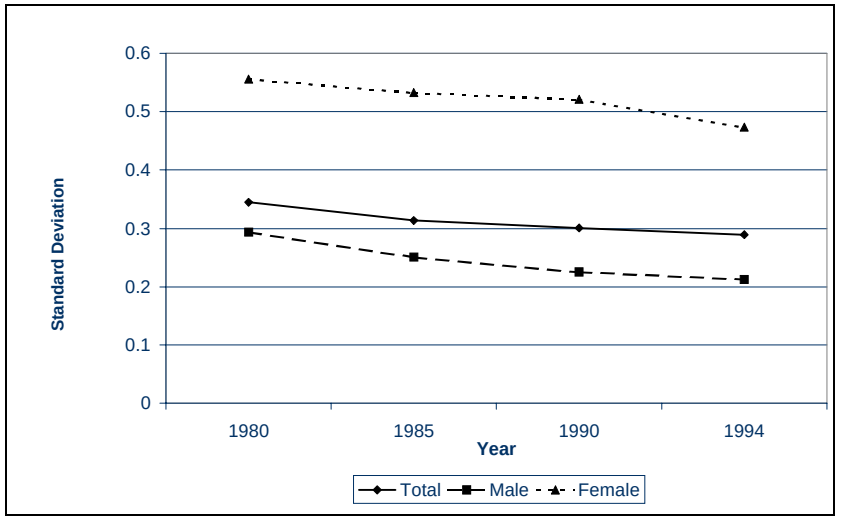

Figure 3: Standard Deviations of the Log of High School Enrollments Over Time

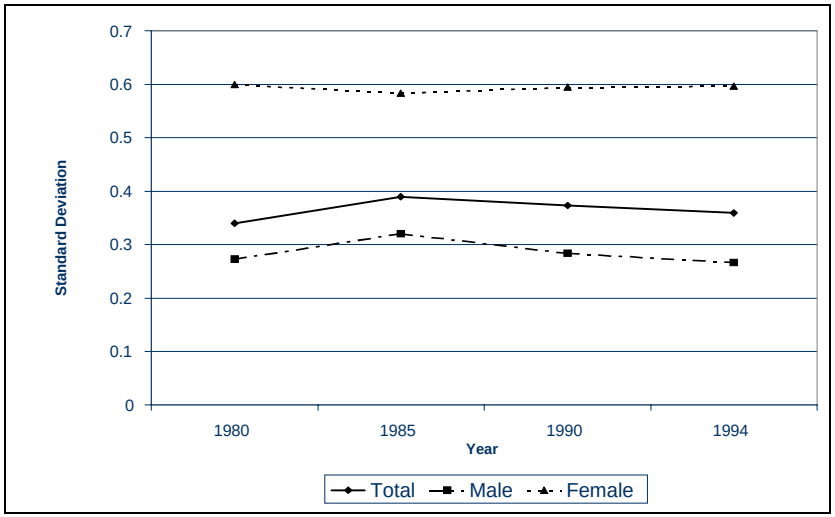

Table 1: School Enrollments in Turkey: Interprovince Inequalities and Some Descriptive Statistics, 1980 and 1994

		Interprovince Inequality Index	Sample Statistics Mean	SD	CV	Min	Max
Level 1 (Primary)							
Total	1980	0.017	94.9	15.4	16.2	48.8	112.2
	1994	0.007	96.0	10.2	10.6	67.0	110.7
Female	1980	0.048	88.6	22.1	24.9	25.7	111.2
	1994	0.013	93.4	12.9	13.9	53.9	109.4
Level 2 (Middle School)							
Total	1980	0.058	38.4	12.0	31.3	14.6	66.5
	1994	0.041	63.5	16.5	26.0	28.7	101.5
Female	1980	0.147	24.8	12.0	48.2	4.5	58.3
	1994	0.097	49.3	18.8	38.0	13.2	90.6
Level 3 (High School)							
Total	1980	0.059	24.5	7.8	31.9	10.7	44.2
	1994	0.059	48.6	15.2	31.4	18.1	85.8
Female	1980	0.170	15.7	8.2	52.0	3.2	38.6
	1994	0.154	36.2	16.4	45.5	6.4	77.8

Table 2: Index of Interlevel Enrollment Inequality for the Turkish Provinces, 1980 and 1994

	Total		Female	
	1980	**1994**	**1980**	**1994**
Adana	0.112	0.032	0.173	0.051
Adiyaman	0.202	0.094	0.413	0.217
Afyon	0.189	0.054	0.364	0.137
Agri	0.244	0.193	0.335	0.483
Amasya	0.143	0.017	0.289	0.054
Ankara	0.062	0.004	0.087	0.008
Antalya	0.190	0.050	0.274	0.070
Artvin	0.111	0.006	0.256	0.021
Aydin	0.161	0.040	0.214	0.055
Balikesir	0.110	0.026	0.181	0.042
Bilecik	0.154	0.013	0.276	0.031
Bingol	0.245	0.111	0.462	0.279
Bitlis	0.160	0.120	0.355	0.376
Bolu	0.183	0.041	0.306	0.079
Burdur	0.131	0.028	0.236	0.037
Bursa	0.161	0.028	0.248	0.048
Canakkale	0.123	0.017	0.220	0.035
Cankiri	0.272	0.064	0.532	0.153
Corum	0.294	0.069	0.530	0.173
Denizli	0.155	0.042	0.228	0.064
Diyarbakir	0.115	0.092	0.181	0.184
Edirne	0.141	0.020	0.176	0.033
Elazig	0.111	0.028	0.228	0.098
Erzincan	0.197	0.057	0.361	0.142
Erzurum	0.166	0.063	0.356	0.243
Eskisehir	0.066	0.005	0.125	0.015
Gaziantep	0.220	0.124	0.309	0.232
Giresun	0.193	0.036	0.319	0.080
Gumushane	0.288	0.083	0.794	0.280
Hatay	0.171	0.055	0.246	0.097
Isparta	0.100	0.026	0.215	0.041
Icel	0.145	0.042	0.195	0.057

Table 2: contd.

	Total		Female	
	1980	**1994**	**1980**	**1994**
Istanbul	0.085	0.024	0.090	0.024
Izmir	0.083	0.022	0.098	0.026
Kars	0.168	0.084	0.291	0.171
Kastamonu	0.284	0.058	0.568	0.147
Kayseri	0.165	0.028	0.320	0.059
Kirklareli	0.106	0.008	0.151	0.016
Kirsehir	0.154	0.017	0.287	0.056
Kocaeli	0.096	0.014	0.174	0.032
Konya	0.203	0.063	0.440	0.143
Kutahya	0.194	0.043	0.490	0.140
Malatya	0.111	0.028	0.207	0.068
Manisa	0.217	0.059	0.339	0.090
K.Maras	0.252	0.075	0.419	0.159
Mugla	0.191	0.058	0.251	0.068
Mus	0.214	0.177	0.398	0.388
Nevsehir	0.227	0.048	0.360	0.081
Nigde	0.283	0.091	0.420	0.177
Ordu	0.177	0.082	0.294	0.143
Rize	0.160	0.016	0.377	0.056
Sakarya	0.180	0.043	0.328	0.100
Samsun	0.205	0.047	0.306	0.091
Sinop	0.317	0.094	0.489	0.158
Sivas	0.202	0.045	0.370	0.119
Tekirdag	0.146	0.018	0.200	0.026
Tokat	0.195	0.059	0.415	0.152
Trabzon	0.120	0.028	0.241	0.066
Tunceli	0.130	0.023	0.232	0.029
Sanliurfa	0.211	0.136	0.322	0.341
Usak	0.180	0.037	0.294	0.073
Van	0.208	0.109	0.286	0.300
Yozgat	0.244	0.069	0.445	0.181
Zonguldak	0.173	0.028	0.314	0.082
HMS Composite	0.170	0.115	0.323	0.319

Note: HMS Composite province is composed of Hakkari, Mardin and Siirt or 1980 and includes Batman and Sirnak also for 1994.

Table 3: Convergence Regressions for Enrollment Rates: Turkish Interprovincial Data, 1980-1994

	Constant term	Coefficient of ln(ENR80)	R Square	F-Statistic
Primary Level				
Total	2.31	-0.50	0.707	152.09
	(12.44)	(-12.33)		
Male	2.04	-0.45	0.387	39.74
	(6.24)	(-6.30)		
Female	2.73	-0.59	0.893	524.50
	(23.61)	(-22.9)		
Middle School Level				
Total	1.34	-0.23	0.327	30.58
	(8.98)	(-5.53)		
Male	1.86	-0.36	0.528	70.47
	(10.95)	(-8.39)		
Female	1.34	-0.20	0.316	29.08
	(11.61)	(-5.39)		
High School Level				
Total	0.80	-0.04	0.008	0.48
	(4.62)	(-0.69)		
Male	1.22	-0.17	0.099	6.90
	(5.34)	(-2.63)		
Female	1.02	-0.07	0.037	2.39
	(8.75)	(-1.55)		

Notes: t-statistics are in parenthesis. The number of observations in each case is 65, which is the total number of provinces.

Table 4: Standard Deviations of the Log of Enrollment Rates by School Level Over Time

Primary	**Total**	**Male**	**Female**
1980	0.196	0.109	0.353
1985	0.108	0.064	0.177
1990	0.101	0.071	0.156
1994	0.116	0.086	0.160
Middle	**Total**	**Male**	**Female**
1980	0.344	0.294	0.556
1985	0.313	0.251	0.532
1990	0.300	0.225	0.521
1994	0.288	0.213	0.473
High	**Total**	**Male**	**Female**
1980	0.340	0.273	0.600
1985	0.390	0.321	0.583
1990	0.373	0.284	0.595
1994	0.359	0.267	0.597

Table 5: Convergence Regressions for Enrollment Rates: Panel Data Estimation

	Constant term	Estimated Coefficient	R Square	F-Statistic	Standard Error
Primary Level					
Total	5.05	-1.09	0.811	8.5	0.05
	(28.04)	(-28.07)			
Male	4.85	-1.04	0.640	3.5	0.05
	(16.47)	(-16.5)			
Female	4.68	-1.01	0.912	21	0.05
	(30.43)	(-30.46)			
Middle School Level					
Total	0.86	-0.18	0.531	25.1	0.06
	(8.11)	(-7.21)			
Male	1.35	-0.29	0.636	20.9	0.06
	(11.9)	(-11.04)			
Female	0.24	-0.03	0.484	27.1	0.08
	(2.36)	(-1.29)			
High School Level					
Total	-0.39	0.14	0.216	6.2	0.16
	(-3.21)	(4.59)			
Male	-0.35	0.13	0.172	4.5	0.17
	(-2.25)	(3.23)			
Female	-0.14	0.83	0.250	9.3	0.16
	(-2.02)	(4.78)			

Notes: t-statistics are in parenthesis. The total number of observations in each case is 195.

Table 6: Determinants of Intraprovince Interlevel Inequality in the Turkish Provinces, 1980 and 1994

		Coefficient of			
Dependent Variable	**Constant term**	**Per Capita Income**	**Rural**	**R Square**	**F-Statistic**
Inequality Measures					
INTRA80	0.062	-3.2E-08	0.002	0.38	19.1
	(1.48)	(-2.18)	(3.95)		
INTRA94	0.073	-3.5E-08	0.000	0.34	15.7
	(3.05)	(-4.39)	(1.07)		
INTRA80F	0.022	-6.2E-08	0.005	0.43	23.2
	(0.26)	(-2.07)	(4.62)		
INTRA94F	0.183	-1.0E-07	0.001	0.39	20.1
	(3.09)	(-5.06)	(1.08)		
Equality Measures					
TRATIO80	46.46	5.0E-06	-0.281	0.44	24.7
	(9.17)	(2.83)	(-4.19)		
TRATIO94	51.80	1.2E-05	-0.133	0.32	14.9
	(6.22)	(4.26)	(-1.08)		
FRATIO80	40.18	5.5E-06	-0.353	0.55	37.9
	(8.05)	(3.15)	(-5.34)		
FRATIO94	40.39	1.5E-05	-0.240	0.43	23.8
	(4.50)	(5.09)	(-1.81)		

Notes: t-statistics are in parenthesis. The number of observations in each case is 65, which is the total number of provinces.