



## GENDER DIFFERENTIALS IN MATHS TEST SCORES IN MENA COUNTRIES

by

Menshawy Badr, Oliver Morrissey and Simon Appleton

### Abstract

This paper investigates gender inequality of academic achievement using mean and quantile decomposition analysis in eight selected MENA countries. We use data from TIMSS 2007 to decompose the test scores gap between boys and girls at the eighth grade. There is a mixed picture of gender inequality across the eight countries; the gap favours boys in three, favours girls in three and there is no average difference in two countries. No particular factors consistently explain gender inequality in test scores across MENA. In general, although family characteristics tend to favour girls (in most countries their characteristics suggest they should perform better than boys) the returns to education tend to favour boys (they get a higher test score for given characteristics); the educational system appears to favour boys.

**JEL Classification:** I21, O15, O53

**Keywords:** Educational Attainment, Maths Test Scores, Gender Differentials, MENA

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## 1. Introduction

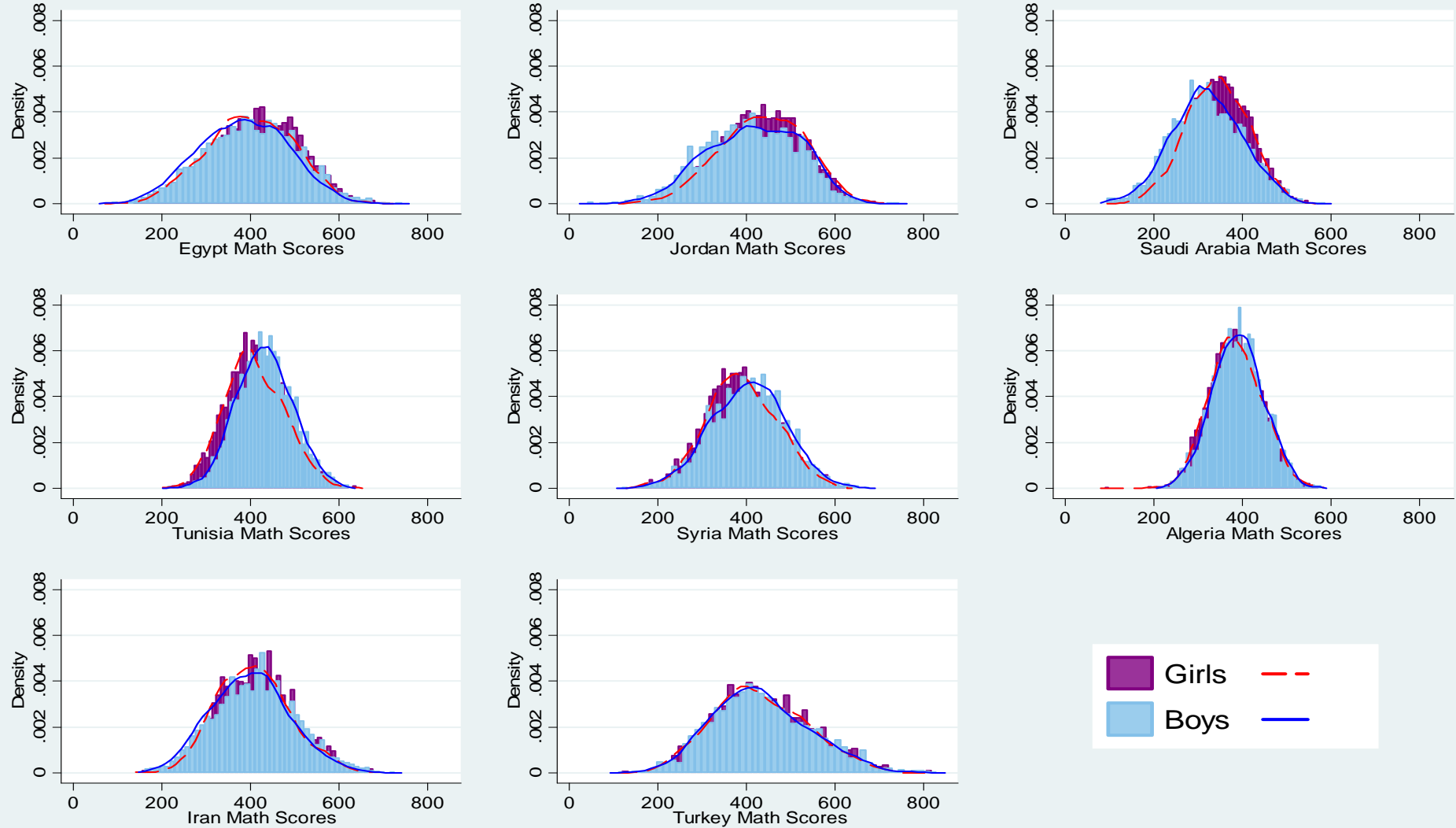
Estimating education production functions for a sample of eight Middle East and North Africa (MENA) countries using Trends in International Mathematics and Science Study (TIMSS) data to identify the determinants of educational achievement (measured as test scores in Maths) reveals considerable variation across the countries (Badr et al., 2012). This paper extends the analysis to investigate the gender differentials in maths achievements in the MENA countries, i.e. the performance of girls compared to boys. We investigate the factors that may explain the differentials within countries and the differences across countries. Two broad types of factors are distinguished: student characteristics including home environment and school resources.

Economic and political inclusion of females is a fundamental development challenge for the MENA region, as gender inequality is quite widespread (World Bank, 2010). Women in MENA face limited labour market mobility, a mismatch of skills from school with labour market requirement (although this is a problem for all students), and legal, institutional or cultural restrictions. There has been progress in enrolment ratios for girls so that the enrolment gender gap has largely disappeared for primary education (World Bank, 2010). Enrolment differences in secondary education are evident in the few countries for which data are available but are not consistent, with the rate for girls higher than boys in Saudi Arabia but lower in Syria and Turkey. However, it is the quality of education that is most important for labour productivity, and gender differences in achievement will have labour market ramifications. Appleton (1995) argues that poor performance for girls is related to gender inequality within poor families, hence educational outcome is related to the home background. The principal aim of this paper is to assess the extent of gender differences in test scores for the MENA countries.

Perhaps surprisingly, there is no common pattern of gender differences in maths test scores across countries, although the differences across countries are marked. As shown in Figure 1, in two countries there is no difference (Iran and Turkey, bottom row), in three girls perform better (Egypt, Jordan and Saudi Arabia, top row) and in three boys perform better (Algeria, Syria and Tunisia, middle row) on average (i.e. comparing mean test scores).

Figure 1: Test scores distribution by gender across MENA countries

## MENA Countries Maths Scores by gender



The median scores are close to 400 for all countries but the distributions are quite different – notably narrow and peaked for Algeria and Tunisia, flatter for Egypt, Jordan and especially Turkey. This implies that it is important to investigate gender differences across the distribution of scores.

This paper adds to the literature in two ways. First, to our knowledge, there is no other study using test scores (to capture cognitive skills and education quality) to characterize and investigate the determinants of the education gender gap in a sample of MENA countries. Second, we employ mean and quantile decomposition analysis to identify any covariates contributing to the gender difference at points in the distribution, facilitating a richer exploration of the data.

Decomposition analysis offers a means to analyse the differences in outcomes between groups, males and females in our case. The original literature on decomposition and many subsequent studies addressed wage inequality especially by gender (Oaxaca, 1973; Blinder, 1973). Fortin, Firpo, and Lemieux (2010) provide the theoretical framework and a comprehensive discussion of decomposition techniques. The methods are relatively simple when applied to the mean estimates using standard Oaxaca-Blinder decomposition, but the mean is not a good representation of the whole distribution. Inequality at the top and bottom of the distribution may be particularly interesting and techniques have been developed for decomposition analysis across the entire distribution. The main challenge is to construct a counterfactual distribution with acceptable assumptions and consistent estimates. These methods are reviewed in Section 4.2.

The structure of the paper is as follows. Section 4.1 provides a brief overview of related literature, background on gender inequality in education in MENA and discusses the TIMSS data for MENA. Section 4.2 outlines the decomposition methods employed in the paper, and Section 4.3 provides and discusses the decomposition results (detailed results are in the Appendix). Section 4.4 concludes with a consideration of implications for education policy to reduce inequality.

## 2. Gender Inequality in Education: Context and MENA

### 2.1 Test Score Performance in MENA Countries

Students test score performance in MENA countries is low by international, and even developing country (given incomes), standards. Although the low levels of performance apply to boys and girls, the differences vary across the MENA countries.

Table 1 shows the mean scores and percentage of boys and girls with test scores at or below various TIMSS international benchmarks for the MENA countries. About half or more of students fall below the lowest benchmark (400 represents basic knowledge) in all countries except Jordan, Tunisia and Turkey (the only countries where mean scores for boys and girls are above 400, Iran being at 400 for girls and slightly above for boys). About 80% of Saudi students do not meet the lowest benchmark requirement in mathematics, with only three percent above the 475 point benchmark. Few MENA countries have significant shares of students achieving more than 550 points, except Turkey (15% of boys and girls), Jordan (12% of girls and 10% of boys) and to a lesser extent Iran and Egypt (6% girls and 5% boys).

In addition to the generally low performance across countries, a striking feature is that there is no relationship between the gender bias and overall performance. The three countries with the highest mean scores include one with a bias in favour of girls (Jordan), one in favour of boys (Tunisia) and one with no bias (Turkey); Iran, with no bias, is the next best in performance. The worst performer has a gender bias towards girls (Saudi) whereas the next worst has a bias towards boys (Algeria). Of the remaining two, Egypt has a bias towards girls, and Syria towards boys. This implies that, at least in terms of means, factors that explain performance may not be the same as factors that explain gender differences.

**Table 1 : Students (%) by international benchmarks of maths test scores**

| Country | sex   | Mean | Benchmarks |                 |                 |                 |                 |
|---------|-------|------|------------|-----------------|-----------------|-----------------|-----------------|
|         |       |      | Below 400  | From 400 to 475 | From 475 to 550 | From 550 to 625 | At or Above 625 |
| Egypt   | Girls | 399  | 50         | 27              | 17              | 5               | 1               |
|         | Boys  | 384  | 56         | 25              | 15              | 4               | 1               |
| Jordan  | Girls | 438  | 35         | 28              | 25              | 10              | 2               |
|         | Boys  | 418  | 42         | 25              | 22              | 9               | 1               |
| Saudi   | Girls | 343  | 79         | 18              | 3               | 0               | 0               |
|         | Boys  | 320  | 84         | 13              | 2               | 0               | 0               |
| Iran    | Girls | 407  | 47         | 32              | 15              | 5               | 1               |
|         | Boys  | 400  | 51         | 30              | 14              | 4               | 1               |
| Turkey  | Girls | 431  | 40         | 27              | 18              | 10              | 5               |
|         | Boys  | 432  | 41         | 26              | 18              | 10              | 5               |
| Tunisia | Girls | 410  | 45         | 37              | 16              | 2               | 0               |
|         | Boys  | 432  | 32         | 43              | 21              | 4               | 0               |
| Syria   | Girls | 389  | 57         | 29              | 12              | 2               | 0               |
|         | Boys  | 404  | 47         | 33              | 17              | 3               | 0               |
| Algeria | Girls | 385  | 61         | 32              | 6               | 0               | 0               |
|         | Boys  | 390  | 57         | 35              | 7               | 0               | 0               |

Note: Relates to students in school grade 8 (about 14 years old)

Source: Own calculations from TIMSS 2007

Appendix Table A.1 provides descriptive statistics of maths test scores for each country with the mean, standard deviation, coefficient of variation, skewness, and central peak and shape measured by kurtosis. The coefficient of variation (CV) captures the 'spread' of the distribution. This is least for Algeria and Tunisia with compressed distributions around the mean, and largest for Turkey. The skewness statistic captures the asymmetry of the distribution of scores around the mean; if the distribution is skewed to the right it is positive (above the mean), to the left it is negative (mildly so for Jordan), or if equal to zero it is symmetrical around the mean (normal distribution). Test scores tend to be symmetric and close to a normal distribution; in no country does skewness exceed boundaries of (+0.5 to -0.5). There is positive skewness but not very pronounced for Turkey (especially boys) and even less so for Iran (especially girls), so both have a relatively larger number of strong performers (as suggested in Table 1). The kurtosis statistic indicates the weight in the tails of the distribution; if it is positive there is a greater likelihood of higher extreme values from the mean (greater weight to the right), if it is negative there is greater weight below the mean. Kurtosis is positive in all countries, but close to the bound for a normal distribution (3), as would be expected given the low mean and median values. The percentiles threshold tests scores show substantial differences across distributions among MENA by gender, illustrated in Figure 1 and Figure 2.

Figure 2: Test scores gap between boys and girls in MENA across quantiles

## Maths Scores Gap Trend across Quantiles Girls - Boys (MENA Countries)

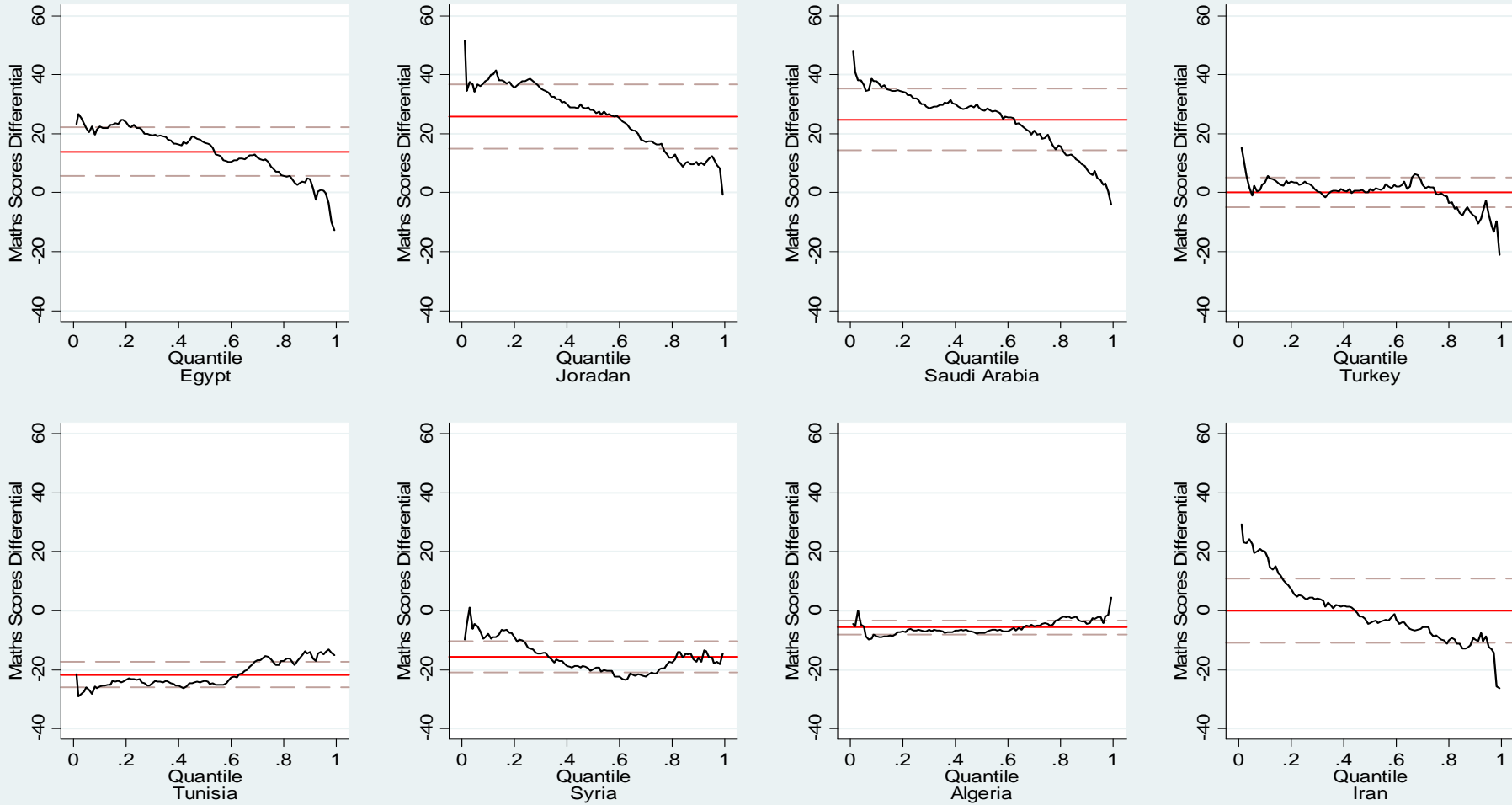




Figure 3: Relative distribution of maths test scores in MENA countries by gender (boys as reference)

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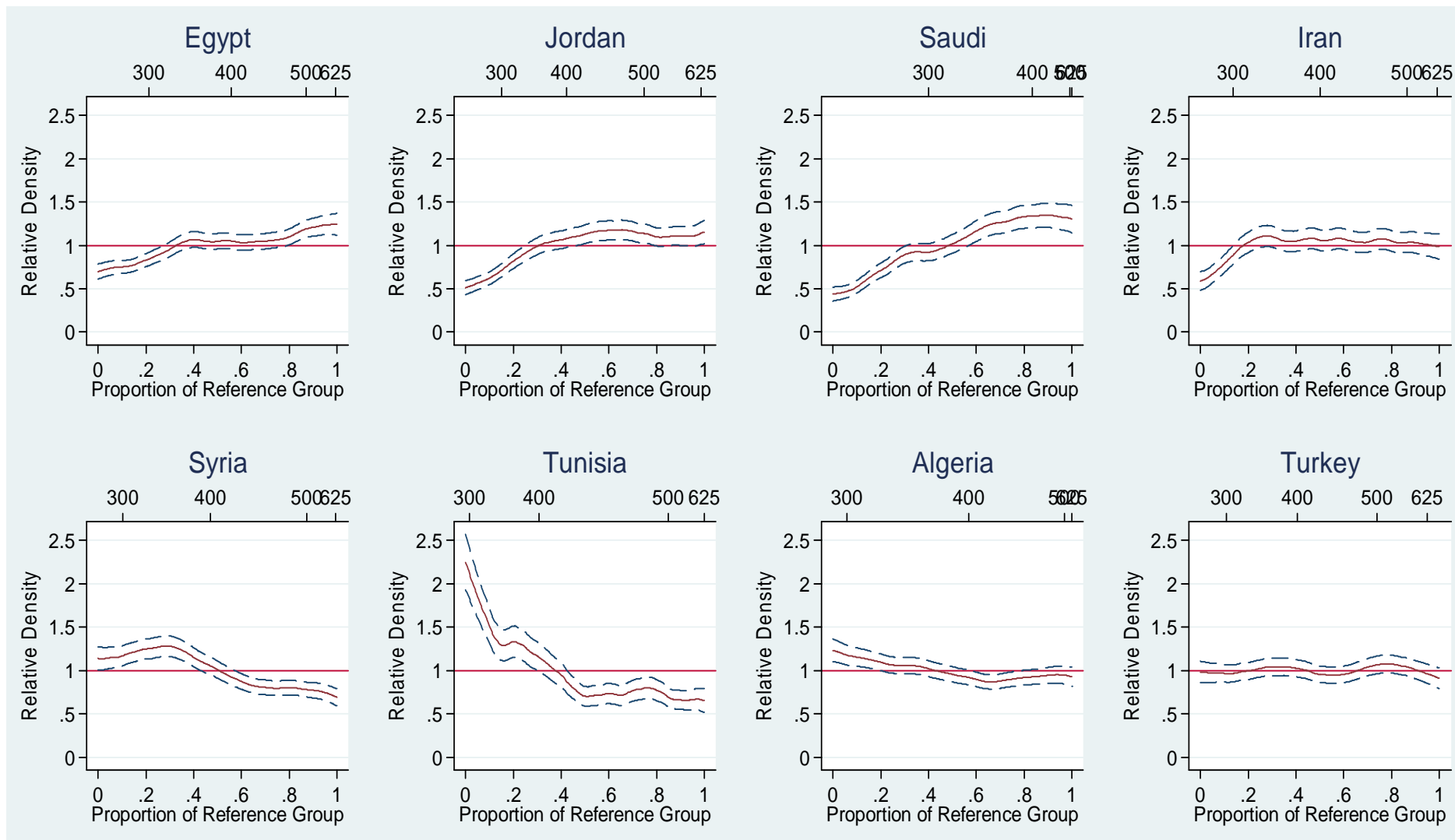


Figure 1 exploits the differences between boys and girls. The first row comprises the three countries (Egypt, Jordan and Saudi Arabia) where girls outperform boys, illustrated by the dark shading to the right of the mean. The middle row shows the countries (Tunisia, Syria and Algeria) where boys outperform girls, so the dark shading is to the left of the mean. Although there are no significant differences in mean scores in Iran and Turkey (final row), the dark shading shows differences between boys and girls in parts of the distribution.

The quantiles distribution of test scores differences (girls – boys) in Figure 2 illustrate the gap across the distribution. The horizontal solid line represents the mean gap (the dotted lines show the standard deviation); for example, the mean test scores gap is 13 points in favour of girls in Egypt. The gap is not symmetric across distributions. In the three countries where girls do better than boys at the mean the distribution tends to be downward sloping, i.e. girls do considerably better at lower levels of performance, but among those with higher test scores there is no difference, and in Egypt boys do better. Although there is no mean difference in Iran or Turkey, the distribution is downward sloping: girls do considerably better at lower levels of performance but boys do better at higher levels (especially in Iran). Thus, the mean disguises considerable differences at the tails, especially in Iran. The distribution is much flatter in the countries where boys do better, slightly upward sloping for Algeria and Tunisia, and somewhat U shaped for Syria, but always negative (except the top performers in Algeria, where girls do slightly better).

The distribution of the gender gap differences is illustrated in a more comparable way with the relative distributions in Figure 3. Relative distribution is a non-parametric method to analyze differences between groups graphically (Handcock and Morris, 1998). The method compares the relative ranks of two groups using one as the reference (boys in Figure 3). Taking Syria as an example, a relatively high percentage of girls are at the bottom quantiles, so girls comprise a larger share of worst performers compared to boys, whereas a relatively greater share of boys are in the top quantiles. This is even more pronounced in Tunisia and less pronounced in Algeria, the two other countries where boys do better on average. In the three countries where girls do better on average, girls are 'over-represented' in the top quantiles. The relative distribution is very flat in Turkey and quite flat in Iran.

### 3. Methods

The best known decomposition technique in economics is the Oaxaca-Blinder decomposition method originally used in labour economics to decompose earnings gaps between groups, such as gender, to study wage discrimination (Oaxaca, 1973; Blinder, 1973). The exposition here draws heavily on Fortin, Lemieux, and Firpo (FFL), especially for the quantile decompositions and empirical implementations (Fortin et al., 2011).

#### 3.1 The Oaxaca-Blinder Decomposition Framework

The main objective of the Oaxaca-Blinder method is to identify the sources of changes in the distribution of outcomes between different states of the world. The Oaxaca-Blinder decomposition splits the overall differences into two components, the first attributable to differences in pay-off structure and the second attributable to observable characteristics differences. An education production function of the following form is estimated for both groups:

$$T_{Kis} = \beta_0 + \delta_1 F_{Kis} + \delta_2 S_{Ks} + \alpha D_{Kis} + \varepsilon_{Kis}, \quad K = g, b \quad (1)$$

Where  $T$  is the test score of student  $i$  in class  $c$  in school  $s$  (the  $c$  subscript is omitted for convenience as most MENA countries select only one class from each school),  $F$  is a vector of family background variables and  $S$  is a vector of teacher and school characteristics variables.  $D$  is a vector of dummy variables for each variable in  $F$  and  $S$  to capture missing observations; a dummy takes the value 1 for observations with missing data and 0 otherwise (the variables themselves are set to zero if their values are missing). The coefficient vectors  $\alpha$ ,  $\delta_1$  and  $\delta_2$  are to be estimated. The error term  $\varepsilon$  has two components as we have a two-stage stratified sample, the imputation error on student's level and the sample error at the school level.

We are interested in comparing the test scores distributions under the two mutually exclusive states of the world, being a boy ( $b$ ) or a girl ( $g$ )

$$T_K = m_K(X, \varepsilon), \quad K = g, b \quad (2)$$

where  $\varepsilon$  represent the unobservable characteristics. This implies that the test scores distributions ( $T$ ) can vary between the two groups of students due to: 1) differences in the returns to variables in the education production function,  $m_K(\cdot)$ ; 2) differences in the distribution of observable characteristics ( $X$ ), which include covariates for student, family, and school characteristics; and 3) differences in the unobservable characteristics ( $\varepsilon$ ).

The Oaxaca-Blinder decomposition and its derivatives rely on estimating a counterfactual distribution of the outcome of interest under certain conditions. For example, we might be interested to know the distribution of the test scores that girls ( $g$ ) would have experienced under the conditions prevailing for boys ( $b$ ). Let  $K$  indicate student's gender group,  $T_{g|K=b}$  and  $T_{b|K=g}$  represent the counterfactual test scores for the boys and girls respectively. Let  $F_{T_b|K=b}$  stand for the distribution of the outcome  $T_b$  for boys. We can think of distributional statistics such as mean and quantiles as a real-valued functional of the relevant distributions. This allows us to express any distributional statistic of the test scores distribution as  $\theta(F_{T_b|K=b})$ . Following FFL the overall differences in the distribution of achievements between boys and girls can be written as:

$$\Delta_O^\theta = \theta(F_{T_b|K=b}) - \theta(F_{T_g|K=g}) \quad (3)$$

Splitting this overall difference into its components entails a comparison between the actual and the counterfactual scores distributions. Using the above counterfactuals we can write this decomposition as:

$$\Delta_O^\theta = \left[ \theta(F_{T_b|K=b}) - \theta(F_{T_g|K=b}) \right] + \left[ \theta(F_{T_g|K=b}) - \theta(F_{T_g|G=g}) \right] \quad (4)$$

Simplifying the notation by replacing the distributional function by the sample averages, the decomposition is:

$$\Delta_O^\theta = \bar{X}_b \hat{\beta}_b - \bar{X}_g \hat{\beta}_b + \bar{X}_g \hat{\beta}_b - \bar{X}_g \hat{\beta}_g$$

$$\Delta_O^\theta = (\bar{X}_b - \bar{X}_g) \hat{\beta}_b + \bar{X}_g (\hat{\beta}_b - \hat{\beta}_g) \quad (5)$$

This aggregate decomposition could be shown as two components as in equation (6); the first component ( $\Delta_X^\theta$ ) is the characteristics or the *endowment effect*, known also as composition effect (X) as it reflects differences in the distributions of X's between the boys test score distribution in group *b* and girls distribution of group *g*; the second ( $\Delta_R^\theta$ ) represents the *returns effect* (R) and is known also as the educational response effect (in labour economics decomposition known as structure effect) since it reflects the differences in *coefficients*.

$$\Delta_O^\theta = \Delta_X^\theta + \Delta_R^\theta \quad (6)$$

This decomposition requires two assumptions to hold. First, there are no general equilibrium effects. Second, unobservable factors are conditionally independent of the groups of interest, given the observables. The underlying assumptions of the aggregate decomposition make it easy to split the contribution of each covariate by detailed decomposition.

Empirical implementation of OB decomposition of the mean differences presents a number of issues, such as the choice of omitted group (Oaxaca and Ransom, 1998) and non-linearity of the conditional mean function (Barsky et al., 2002). As some variables may be significant for one gender but not the other there is no unique reference group so we perform the analysis with both male and female as reference.

To allow for the possibility of non-linearity we employ a hybrid of the reweighting technique suggested by DiNardo, Fortin and Lemieux DFL (1996) and the recentered influence function (RIF) developed by Firpo, Fortin, and Lemieux FFL (2010), a mixed methods approach that provides a better overall decomposition in the presence of non-linearity.

### 3.2 Mean decomposition

Following the literature (Lauer, 2000; Ammermueller, 2007; Jann, 2008) we employ both twofold and a threefold decomposition that differs slightly from the two parts Oaxaca-Blinder decomposition presented in equation (6). In two-fold decomposition, the boy's group coefficients correspond to the "non-discriminating" coefficients (returns to characteristics);

assuming that there is a difference in boys and girls coefficients. This suggests that family and school pay more attention to boy's education outcome in accordance to their marginal product but discriminate against girls. On the other hand, it is also plausible that family and school concentrate on girl's education at their marginal product but favour boys. In that case, it would be appropriate to value the characteristics gap by the girl rather than the boy coefficients (Lauer, 2000).

Neumark, (1988) proposed to determine the "non-discriminating" coefficient vector of the pooled sample of the two groups. Alternatively, Cotton, (1988) preferred a weighted average of the two group coefficients, where the weights are the respective proportions of boys and girls in the sample. The choice of the "non-discriminating" reference affects the results and remains somewhat arbitrary. The discrimination interpretation is superficial; first, part of the characteristics component may also be due to discrimination in characteristics, and second, part of the coefficient component may not be attributable to discrimination, for example unobservable factors influence individual's productivity. The three-fold decomposition is a more acceptable alternative in that case since it will not be interpreted in terms of discrimination. The total score gap between boys and girls grouped at the mean is expressed as:

$$\Delta T_o = \bar{T}_b - \bar{T}_g \quad (7)$$

Where  $g$  and  $b$  subscripts denote girls and boys and bars denotes weighted averages. The total maths score gap can be decomposed into three effects, characteristics, returns (coefficients), and characteristics-return interaction based on the WLS estimates of the EPF. The standard two part decomposition identifies two effects (characteristics and returns). The three-fold decomposition includes the interaction:

$$\Delta T = \hat{\beta}_g (\bar{X}_b - \bar{X}_g) + (\hat{\beta}_b - \hat{\beta}_g) \bar{X}_g + (\hat{\beta}_b - \hat{\beta}_g) (\bar{X}_b - \bar{X}_g) \quad (8)$$

where  $X$  comprises the explanatory variables chosen in the production function. The first right hand side of the decomposition equation represents the characteristics effect; it shows how much girls would have scored if they had the same characteristics as boys. The second term represents the returns effect, how girls would have performed if they had the same coefficients as boys. The final part is the interaction between characteristics and returns, the

effect of having different characteristics and coefficients. This decomposition is formulated from the viewpoint of girls. That is, the differences are weighted by the coefficients of girls to determine the characteristics effect. The returns effect measures the expected change in the girls' mean outcome if they had the boys' coefficients.

### **3.3 Quantile Decomposition**

The Oaxaca-Blinder decomposition only applies to the differences in the mean, but decomposing over the mean does not allow for the distribution over quantiles, which was shown above to vary. Ideally the decomposition of test scores should be over the entire distribution. Juhn, Murphy, and Peirce (JMP) (Juhn et al., 1993), DiNardo, Fortin, Lemieux (DFL) (DiNardo et al., 1996), and Machado and Mata (MM) (Machado and Mata, 2005) have proposed methods to decompose over quantiles and other distributional measures. Each method has limitations: heteroskedasticity with JMP, the curse of dimensions with DFL, and MM is computationally intensive. A general limitation to these methods is that only the conditional quantile interpretation is valid in the quantile regressions.

Firpo, Fortin, and Lemieux (2009) proposed an alternative where the estimated coefficient can be seen as the change of the mean value of the covariates on the unconditional quantile. This method offers a consistent computable aggregate and detailed decomposition of quantiles and overcomes the limitations of conditional quantile interpretations. The FFL method provides a way to measure the single covariate contribution to the differences, close to the Chernozhukov, Fernandez-Val and Melly (2009) method of estimating proportions and inverting back to quantiles. Both provide detailed decomposition in the spirit of traditional OB decomposition of the mean (Fortin et al., 2011).

#### **3.3.1 Recentered Influence Function RIF (unconditional quantiles)**

Firpo, Fortin and Lemieux (2009) proposed a regression approach to estimate the impact of the mean value of explanatory variables on the unconditional quantile. This method differs from the conditional quantile regression (Koenker and Bassett, 1978; Koenker, 2005) as it is based on unconditional quantile regression methodology. This is a two stage method. The first stage is to estimate a regression of a transformation of the unconditional quantile of the cognitive achievements variable on the explanatory variables, the Recentered Influence Function (RIF). This permits the estimation of standard partial effects, the Unconditional

Partial Effects (UQPE). The second stage uses these estimates to generate Oaxaca-Blinder decomposition for quantiles of interest.

The Firpo, Fortin and Lemieux method replaces the dependant variable ( $T$ ) with a transformation based on the proposed recentered influence function. The RIF for the quantile of interest  $q_\tau$  is formally defined as

$$RIF(T; q_\tau) = q_\tau + IF(T; q_\tau) = q_\tau + \frac{\tau - I(T \leq q_\tau)}{f_T(q_\tau)} \quad (9)$$

Where  $q_\tau$  can be estimated by the sample quantile,  $I(\cdot)$  is an indicator function for whether the outcome variable is smaller or equal to the quantile, and  $f_T$  is the marginal density function of ( $T$ ) can be estimated using Kernel density. FFL explains the recentered influence function in light of linear transformation of the associated function. RIF is equal to the population  $\tau$ -quantile of the unconditional distribution of  $T$  plus the influence function. Since the expected value of the influence function is equal to zero, the expected value of the RIF will equal the corresponding distributional statistics, in our case quantile. The RIF's regression for the  $\tau^{\text{th}}$  quantile of the distribution of  $T$  can be expressed as  $E[RIF(T; q_\tau) | x]$  so that the unconditional or marginal quantile is equal to:

$$q_\tau = \int E[RIF(T; q_\tau, F_T) | x] \cdot dF(x) \quad (10)$$

Empirical implementation requires two main assumptions for the counterfactual distribution to hold and make sensible interpretations. The conditional independence assumption of “ignorability” is to rule out the possible confounding effects of unobservable on observable characteristics. Second, the “overlapping support” assumption requires an overlap in covariates across groups, so that no observable variable uniquely identifies one of the groups only to be included (Fortin et al., 2010).

The expected value of the linear approximation of the RIF regression of the quantile of interest is equal to the expected value of the true conditional expectation, since the expected value of the approximation error is zero (Fortin et al., 2010). This allows for a simple and meaningful extension of the Oaxaca-Blinder decomposition to the RIF regressions. The decomposition components of quantiles following OB approach can be written as:



*The returns Effect*

$$\Delta_R^{q_\tau} = \bar{X}_g \cdot (\beta_b - \beta_g) , \text{ and}$$

*The characteristics effect*

$$\Delta_X^{q_\tau} = (\bar{X}_b - \bar{X}_g) \cdot \beta_b$$

Since this linear specification is a local approximation, the  $\beta$  estimation is based on different covariates distributions that may not hold if there are large changes in the covariate. This could lead to a bias in the decomposition. A reweighted decomposition analysis is also used to overcome non-linearity problems if they exist and to provide a robustness check of the base estimation.

The use of linear approximation allows for a detailed decomposition that separates the contribution of each single or group of covariate to the various elements of the aggregate decomposition. The returns and the characteristics effect detailed decomposition could be expressed as:

$$\begin{aligned} \Delta_R^{q_\tau} &= \sum_{k=2}^K \bar{X}_{gk} (\gamma_{gk,\tau} - \gamma_{bk,\tau}) , \\ \Delta_X^{q_\tau} &= \sum_{k=1}^K (\bar{X}_{gk} - \bar{X}_{bk}) \gamma_{bk,\tau} \end{aligned} \quad (11)$$

The problem of omitted group choice for the dependant variables is present in quantile decomposition as for the mean. The solution for this problem is by using a sensible reasoning following the theory and literature. The RIF's regressions offer a path independent detailed decomposition, where the order of computing different elements of the detailed decomposition does not affect the results.

### 3.3.2 Recentered Influence Function RIF and Reweighting

The linearity assumption might not hold in all situations, preventing consistent estimates of coefficients and characteristics effects (Barsky et al., 2002). To overcome this problem, a hybrid of FFL recentered influence function decomposition and DFL reweighting approach is employed in this analysis. Reweighting is a way to construct a counterfactual distribution. The idea is simply to reweight the group of interest to look like the other group and apply

the decomposition of RIF. We may ask what the distribution of test scores of girls would look like if they had the same  $X$ 's as boys. To estimate this counterfactual distribution a reweighting factor  $\Psi(X)$  is used to replace the marginal distribution of  $X$  for girls with the marginal distribution of  $X$  for boys.

$$\Psi(X) = \frac{\Pr(X | K_b = 1)}{\Pr(X | K_b = 0)} = \frac{\Pr(K_b = 1 | X) / \Pr(K_b = 1)}{\Pr(K_b = 0 | X) / \Pr(K_b = 0)} \quad \text{for } K=b,g \quad (12)$$

The reweighting factor could be estimated by a probability model of being a boy. Empirical applications suggest estimating probit or logit models, then using the estimated probabilities of being a boy to compute a reweighted value for each observation of girls group. In MENA gender decomposition, the counterfactual distribution of achievements of girls is constructed by reweighting the characteristics of girls so that they look like those of boys, holding the conditional distribution of girls fixed. When the boys group is used as reference the above specification is reversed. This is applied in our analysis to check that the choice of reference group does not have a major effect on the decomposition results. For the reweighting factor to be representative the reweighted sample should be tested for equality with the reweighting group and if found to be unequal, interactions should be included.

The characteristics effect and the coefficients effect for reweighted decomposition could be formally used to check the specification error and the reweighting error when compared to the estimates from OB decomposition without reweighting. In practice, a third sample of girls with boys' weights is constructed to run two Oaxaca decompositions from which we extract the pure characteristics and coefficient effects. The first is with boys sample and the reweighted sample to get the pure educational response effect. The second is with girls sample and the reweighted sample to get the pure composition effect. The characteristics effect is divided into a pure effect and a specification error component  $\widehat{\Delta}_{X,e}^q$ . Similarly, the coefficient effect is divided into pure effect and reweighting error component  $\widehat{\Delta}_{R,e}^q$  which goes to zero in large samples (Fortin et al., 2011). The characteristics effect is written as:

$$\begin{aligned}
\Delta_X^{q_r} &= (\overline{X}_{01} \hat{\gamma}_{01}^q - \overline{X}_0 \hat{\gamma}_0^q) + (\overline{X}_{01} \hat{\gamma}_0^q - \overline{X}_{01} \hat{\gamma}_0^q) \\
&= (\overline{X}_{01} - \overline{X}_0) \hat{\gamma}_0^q + \overline{X}_{01} (\hat{\gamma}_{01}^q - \hat{\gamma}_0^q) \\
&= \widehat{\Delta}_{X,p}^q + \widehat{\Delta}_{X,e}^q
\end{aligned} \tag{13}$$

The returns effect is

$$\begin{aligned}
\Delta_R^{q_r} &= (\overline{X}_1 \hat{\gamma}_1^q - \overline{X}_{01} \hat{\gamma}_{01}^q) + (\overline{X}_1 \hat{\gamma}_{01}^q - \overline{X}_{01} \hat{\gamma}_{01}^q) \\
&= \overline{X}_1 (\hat{\gamma}_1^q - \hat{\gamma}_{01}^q) + (\overline{X}_1 - \overline{X}_{01}) \hat{\gamma}_{01}^q \\
&= \widehat{\Delta}_{R,p}^q + \widehat{\Delta}_{R,e}^q
\end{aligned} \tag{14}$$

#### 4. Empirical results

Decomposition results are split into two main specifications under the mean, one for the twofold decomposition and the other for the threefold decomposition, considering both boys and girls as the reference group. The quantile decomposition results are under two specifications; the first using the recentered influence function and the second employing a hybrid of RIF with reweighting. As a range of decomposition methods are applied for eight countries, many tables of econometric results are generated. All detailed results are presented in Appendix tables and summary tables (for mean decomposition) and preferred or baseline results (for the quantile decomposition) are included below.

As observed already, the eight MENA countries fall into three groups: three countries where girls outperform boys (Egypt, Jordan, Saudi Arabia), three where boys outperform girls (Algeria, Syria, and Tunisia), and two with no significant difference (Turkey and Iran). The results of similar countries will be discussed together and compared to the other groups. Turkey is taken as the benchmark country as there is no difference in achievements of boys and girls and the distribution of gender differences is very flat.

##### 4.1 Decomposition results of the mean gender gap

Two decompositions of mean maths score differences between boys and girls are undertaken, with both boys and girls as the reference group. The Oaxaca-Blinder twofold

decomposition distinguishes the characteristics (also called explained, endowment or composition) effect and the coefficient (unexplained, returns or educational response) effect. The threefold decomposition includes, in addition to these, the interaction effect. The score gap is defined as the difference between the predicted WLS score for the boys and the predicted WLS score for girls. Therefore the gap is positive if the boys perform better than girls and negative if boys perform worse. Appendix Tables A.2 to A.9 present all results: the left part of the tables has the twofold decomposition and the right panel has the threefold decomposition.

**Table 2: Maths test scores decomposition by gender in MENA**

|                        | Algeria   | Syria    | Tunisia  | Turkey    | Iran    | Jordan   | Saudi Arabia | Egypt    |
|------------------------|-----------|----------|----------|-----------|---------|----------|--------------|----------|
| <b>Boys</b>            | 389.4     | 403.8    | 431.3    | 431.6     | 400.2   | 417.1    | 318.5        | 384      |
|                        | (2.229)   | (5.061)  | (2.655)  | (4.995)   | (6.090) | (5.626)  | (3.981)      | (4.587)  |
| <b>Girls</b>           | 384.1     | 387.3    | 410.4    | 432.1     | 407.2   | 437.6    | 341.4        | 397.3    |
|                        | (2.422)   | (4.390)  | (2.769)  | (5.288)   | (5.295) | (6.420)  | (3.614)      | (4.995)  |
| <b>Difference</b>      | 5.302***  | 16.43*** | 20.98*** | -0.543    | -6.987  | -20.47** | -22.83***    | -13.27** |
|                        | (1.805)   | (5.653)  | (2.408)  | (3.888)   | (8.059) | (8.832)  | (5.008)      | (6.445)  |
| <b>Characteristics</b> | -1.749*** | -1.143   | -1.159   | -8.390*** | 0.755   | 10.55    | 11.66        | 0.796    |
|                        | (0.577)   | (5.150)  | (1.218)  | (1.985)   | (39.15) | (23.51)  | (14.32)      | (14.33)  |
| <b>Coefficient</b>     | 7.050***  | 17.58*** | 22.14*** | 7.847**   | -7.742  | -31.02   | -34.49**     | -14.07   |
|                        | (1.828)   | (6.281)  | (2.036)  | (3.609)   | (39.77) | (23.84)  | (14.63)      | (15.79)  |

Note: The gap equals boy minus girl so (+) favours boys and (-) favours girls, Jackknife Standard errors in () & (\*\*\*) p<0.01, \*\* p<0.05, \* p<0.1)

**Table 3: Detailed decomposition results grouped into main categories**

|                     |              | Parents |         | Home      |         | School  |         | Constant |         |
|---------------------|--------------|---------|---------|-----------|---------|---------|---------|----------|---------|
| <b>Algeria</b>      | <b>Char.</b> | -0.219  | (0.255) | -1.316*** | (0.374) | 0.555   | (0.400) |          |         |
|                     | <b>Coef.</b> | 0.264   | (3.319) | -0.0470   | (4.796) | -25.81* | (15.47) | 35.61*   | (18.87) |
| <b>Syria</b>        | <b>Char.</b> | 0.471   | (0.562) | -0.0156   | (1.076) | 0.299   | (4.343) |          |         |
|                     | <b>Coef.</b> | 4.777   | (8.260) | -4.717    | (10.83) | -17.51  | (106.7) | 35.84    | (112.4) |
| <b>Tunisia</b>      | <b>Char.</b> | 0.454   | (0.313) | -0.597    | (0.567) | -0.746  | (0.572) |          |         |
|                     | <b>Coef.</b> | 2.591   | (6.506) | -11.47*   | (6.446) | -25.62  | (20.87) | 59.14*** | (21.01) |
| <b>Turkey</b>       | <b>Char.</b> | -1.269  | (0.787) | -5.421*** | (1.046) | -1.353  | (0.916) |          |         |
|                     | <b>Coef.</b> | -6.551  | (7.843) | -17.48    | (16.07) | -44.77  | (40.05) | 79.55*   | (42.95) |
| <b>Iran</b>         | <b>Char.</b> | -0.613  | (0.872) | -1.970    | (3.008) | 6.216   | (38.99) |          |         |
|                     | <b>Coef.</b> | 0.409   | (5.127) | 2.196     | (8.770) | 74.82   | (57.77) | -86.43   | (69.91) |
| <b>Jordan</b>       | <b>Char.</b> | -0.554  | (1.267) | -3.535    | (2.181) | 19.63   | (21.69) |          |         |
|                     | <b>Coef.</b> | 5.959   | (9.801) | -6.969    | (17.71) | 0.706   | (101.7) | -29.90   | (118.2) |
| <b>Saudi Arabia</b> | <b>Char.</b> | 0.0228  | (0.609) | -10.46*** | (1.977) | 19.80   | (14.28) |          |         |
|                     | <b>Coef.</b> | -10.02  | (6.302) | 16.28     | (12.22) | 45.79   | (33.33) | -91.70** | (39.74) |
| <b>Egypt</b>        | <b>Char.</b> | -0.781  | (0.780) | 0.128     | (1.663) | 5.898   | (23.70) |          |         |
|                     | <b>Coef.</b> | 2.688   | (7.253) | 7.173     | (11.57) | 59.20   | (219.1) | -92.92   | (264.0) |

Note: The gap equals boy minus girl so (+) favours boys and (-) favours girls, Jackknife Standard errors in parentheses (\*\*\*) p<0.01, \*\* p<0.05, \* p<0.1)

**Table 4: Summary of mean test scores decomposition results across MENA**

| Class of prefer         | variables           | Algeria | Syria | Tunisia  | Turkey   | Iran | Jordan | Saudi Arabia | Egypt |
|-------------------------|---------------------|---------|-------|----------|----------|------|--------|--------------|-------|
| Parents                 | Lower-sec EDC       |         |       |          |          |      |        | -R           |       |
|                         | Upper-sec           |         |       |          | -C       | -C   | -C BR  |              |       |
|                         | Post-sec not UNI    |         |       |          |          |      | -C BR  |              |       |
|                         | University degree   |         |       |          |          |      | +C     |              |       |
|                         | Native parents      | NA      | -C BR | -C BR    | -C,+R    | +R   | -R     |              | +R    |
| Home                    | One bookcases       | -C      |       |          | -C       |      | -C BR  | -C BRR       |       |
|                         | Two bookcases       |         |       |          | -C,+R,-I |      |        |              |       |
|                         | Home possess High   |         |       |          |          |      |        | -C,+R,+I     |       |
|                         | Home possess Medium | -C      |       | -R,-C,GR |          |      | -C     |              |       |
|                         | TL spoken ALs       |         |       |          | -C,-R    | -C   |        |              | +R    |
|                         | PC at H&SCL         |         |       | -C, GR   |          |      |        | -C, BR       | -C    |
|                         | PC at H/SCL         |         | +C    |          | -C, BR   |      |        | +C           | +C    |
| School (incl. Location) | T. Certificate      | -R      |       |          |          |      |        |              |       |
|                         | Male teacher        |         |       |          |          | -C   | +R     | +R           |       |
|                         | T. Experience       |         |       |          |          |      |        |              |       |
|                         | M SCL RCS           |         |       |          |          |      |        | +R           | -R    |
|                         | L SCL RSC           |         |       |          |          |      | -R     |              |       |
|                         | T. UNI Degree       |         |       |          |          |      |        |              |       |
|                         | COMMU.>50000        |         |       |          |          |      |        |              |       |
|                         | Disadv.             |         | -R    |          | -C       |      |        |              |       |
|                         | Class size          |         |       |          |          | +R   |        |              |       |
| Class size square       |                     |         |       |          |          |      |        |              |       |

**Note:** (+) indicates pro boy effect, (-) indicates pro girl effect, (C) indicates characteristics effect and (R) indicates Returns effect. GR: girls as reference and BR boys as reference. BRR boys as reference reweighted.

The performance gap is affected by coefficient and characteristics effects, Tables 2 to 4 summarise the significant results of these effects. Countries presented by favouring order starting from left by countries favouring boys, no favouring, and favouring girls. The total gap (Table 2) indicates significant differentials of maths performance between boys and girls in six countries. Turkey and Iran do not exhibit gender performance differences on average. The total characteristics gap shows a significant effect only in Algeria and Turkey. That is if boys had similar characteristics to girls they would achieve better test scores in both countries. The characteristics effect is larger in Turkey compared to Algeria. The coefficient effect, which reflects the educational production process (the 'returns' to variables in the EPF), generally contributes more toward the gender performance gap. The coefficient effect advantages boys in Algeria, Syria, Tunisia and Turkey. That is, if girls had the same production process as boys they would achieve higher maths scores by the amount of the coefficient gap. However, this effect advantages girls in Saudi Arabia. That is, if a Saudi boy

had the same education process as girls on average he would improve his maths score by 35 points.

Disaggregating total gaps by type of variables explain the sources of the overall effects. For gender neutral countries, Turkey has a relatively high number of significant variables (Appendix Table A.5). Although there is no mean difference, home and parents' characteristics tend to favour girls (indicated as -C in Table 4; Table 3 shows this is primarily due to the effect of home characteristics), i.e. girls tend to be from households with more favourable characteristics. However, boys with native parents and two bookcases at home tend to do better than girls with those characteristics, i.e. the coefficients favour boys (indicated by +R in Table 4, although Table 3 shows that home coefficients overall are insignificant); the exception is if the test language is always spoken at home, in which case girls do better (-R). Overall there is a trade-off (Table 2): characteristics tend to have an effect that favours girls but coefficients (returns) tend to favour boys. The significant constant (Table 3) indicates some generic effect that favours boys but is not captured by the variables included.

Few variables are significant for Iran (Appendix Table A.6) and neither characteristics nor coefficients are significant overall (Table 2 and 3). Some characteristics tend to favour girls (parental education, test language spoken at home and having a male teacher) whereas some coefficients tend to favour boys (they do better if they have native parents or in larger classes), as shown in Table 4. As there is no mean difference in these two countries the implication is that the differential effects of some characteristics (either values or coefficients) cancel out on average. If the characteristics are distributed differently for boys and girls we may observe score gaps at parts of the distribution. For example, if students with the lowest scores are more likely to be in disadvantaged areas we would expect girls to do better at the lower end of the distribution in Turkey (-C on 'Disadv'). This is explored below.

There are few significant variables for countries where boys outperform girls, perhaps because the total mean gap between boys and girls is quite small for Algeria, Syria and Tunisia, at 5, 16, and 21 points respectively (Table 2). The total gap is mostly due to the differences in returns as the gap due to coefficients is significantly positive for Algeria (7 points), Syria (18) and Tunisia (23), whereas the total negative characteristics effect is small

and only significant for Algeria (Table 3). However, the only significant individual coefficient effects favour girls (-R in Table 4), it is overall coefficient effects for schools (Algeria) and home (Tunisia) that account for the bias in favour of boys (Table 3). It is not possible to identify any specific factors explaining why boys do better in these countries; indeed girls tend to have some more favourable home characteristics than boys (Table 4). We consider below if this may be because of differential effects across the distribution.

A number of variables are significant for countries where girls do better (the final three countries in the tables, see Appendix Table A. 7, Table A. 8 and Table A. 9 for details). The overall effect due to coefficients is negative and greater in absolute value than that due to characteristics, although only significant for Saudi Arabia (Table 2; Table 3 shows this is due to home factors), suggesting that insofar as there are significant indicators girls tend to do better because they tend to have better returns. However, individual significant characteristics (mostly related to home or parents) favour girls, although coefficients tend to favour boys (Table 4). There is a suggestion for Saudi Arabia, and to a lesser extent Jordan, that certain school factors can offset this to some extent (as coefficients favour boys). As for the other countries, the next sub-section explores if differences across the distribution help identify any core factors explaining gender differences.

#### **4.2 Decomposition results along the educational achievement distribution**

Quantile decomposition is preferable to mean decomposition as it captures the gap along the distribution rather than only at the mean. The kernel density function distribution graphs in Figure 1, as well as the quantile differentials from Figures 2 and 3, show different overlaps between boys' and girls' maths scores distributions at different points. This might reflect differences across the upper and bottom tails of the scores distributions. The decomposition of maths achievements along 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> quantiles reveals these expected gender differentials in MENA. The discussion of quantile results will follow the same country sequence of presentation as for the mean.

Quantile decompositions under two specifications are employed for maths scores gap between boys and girls, with both boys and girls as reference group. As discussed in the methods section, the first specification uses RIF and employs the decomposition technique suggested by FFL (2010). The modified hybrid decomposition under the second specification

uses a combination of both the FFL decomposition based on RIF and the reweighting technique proposed by DFL (DiNardo et al., 1996) to handle the possible nonlinearity relation between the dependent variable with the explanatory variables.

The results of overall math gap decompositions across quantiles are presented in Tables 5 to 7 using the RIF-reweighting technique (FFL&DFL) and boys as the reference group. Under this specification, the characteristics effect shows the differentials using covariates groups (parents, home and school) between boys and girls (boys distribution reweighted to look like girls) under the production process of boys (boys' coefficients estimates). That is, if girls have similar characteristics to boys how would they perform (better or worse)? The coefficients effect represents the differences between the coefficients of boys and girls (boys distribution reweighted to look like girls) evaluated at the girls' characteristics. That is to say if girls had the same education production process as boys, what they would achieve in maths? Appendix B Tables B1 to B18 presents all the detailed results using boys as the reference group in Tables B1 to B8 and girls as the reference in the remaining tables. Each table reports 10<sup>th</sup>, 50<sup>th</sup> and 90<sup>th</sup> quantiles under the two specifications.

The reweighted regression decomposition differs from the standard Oaxaca-Blinder decomposition in two ways. First, the specification error (equal to zero if the model is linear) adjusts the characteristics effect if the model specification is not linear. Second, the returns effect is based on comparing coefficient estimates of the boys and the weighted estimate of boys sample to look like girls as shown in the methods section. The reweighting error is the complement to the pure returns effect and should go to zero when the reweighting factor is consistent.

#### a) **Countries with Pro-Boys Gap**

There are persistent and mostly significant gaps in maths performance across the distribution for countries where boys outperform girls; these tend to decrease as one moves up quantiles. The significant characteristics effect (attributable to home) tends to favour girls in Algeria and Tunisia but not in Syria (Table 5), but the coefficients effect favours boys overall in the three countries (significant except for the bottom quantile in Syria). That is, if boys have similar home characteristics to girls they would do better in maths scores, whereas, if girls had the same coefficients as boys they would attain better maths scores.



Overall, the coefficients effect dominates the characteristics effect in Algeria, Tunisia, and Syria.

The significant characteristics effects favouring girls in Algeria are concentrated on the home background, where the numbers of books as an indicator of SES and home possessions as a proxy for families' wealth are the main deriving forces (Appendix Table B.1). These differentials imply that relative to boys more girls are from better SES and wealthy families.

**Table 5 : Quantile Decomposition by Main Categories: countries where boys do better**

|                            |         | Algeria            |                    |                    | Syria              |                    |                    | Tunisia            |                    |                    |
|----------------------------|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                            |         | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q |
| <b>Boys</b>                |         | 314.0              | 389.6              | 466.7              | 296.6              | 405.7              | 510.8              | 349.5              | 429.7              | 515.3              |
|                            |         | (3.323)            | (2.628)            | (2.454)            | (6.700)            | (5.767)            | (5.520)            | (4.498)            | (3.169)            | (4.277)            |
| <b>Girls</b>               |         | 307.5              | 382.9              | 461.9              | 285.9              | 385.0              | 492.6              | 326.1              | 407.1              | 499.9              |
|                            |         | (3.221)            | (2.819)            | (2.582)            | (6.494)            | (4.977)            | (5.169)            | (3.338)            | (3.189)            | (3.814)            |
| <b>Difference</b>          |         | <b>6.537</b>       | <b>6.653</b>       | <i>4.812</i>       | 10.67              | <b>20.73</b>       | <b>18.22</b>       | <b>23.46</b>       | <b>22.52</b>       | <b>15.38</b>       |
|                            |         | (3.156)            | (2.396)            | (2.849)            | (7.993)            | (6.812)            | (5.975)            | (4.150)            | (3.833)            | (4.808)            |
| <b>Char.</b>               | Total   | <b>-1.325</b>      | <b>-1.395</b>      | <b>-2.156</b>      | -2.894             | -0.00472           | -0.800             | <b>-2.150</b>      | <b>-1.820</b>      | -0.387             |
|                            |         | (0.597)            | (0.503)            | (0.997)            | (3.391)            | (3.261)            | (3.262)            | (0.634)            | (0.657)            | (0.790)            |
|                            | Parents | -0.365             | -0.110             | -0.299             | -1.327             | -0.385             | 0.405              | -0.683             | -0.566             | 0.443              |
|                            |         | (0.325)            | (0.279)            | (0.444)            | (0.713)            | (0.628)            | (0.739)            | (0.482)            | (0.380)            | (0.345)            |
|                            | Home    | <b>-1.012</b>      | <b>-1.233</b>      | <b>-1.915</b>      | 0.692              | 0.372              | -0.574             | <b>-0.720</b>      | <b>-0.672</b>      | -0.394             |
|                            |         | (0.422)            | (0.364)            | (0.705)            | (1.038)            | (0.881)            | (0.952)            | (0.345)            | (0.260)            | (0.384)            |
|                            | School  | 0.622              | 0.481              | 0.528              | -0.989             | 1.335              | 0.886              | -0.555             | <b>-0.702</b>      | -0.703             |
|                            | (0.552) | (0.393)            | (0.447)            | (2.889)            | (3.344)            | (3.133)            | (0.371)            | (0.327)            | (0.462)            |                    |
| <b>Specification error</b> |         | 0.0352             | 0.212              | 0.0276             | -1.239             | -0.285             | -0.407             | -0.415             | -0.0120            | -0.0567            |
|                            |         | (0.621)            | (0.518)            | (0.935)            | (1.843)            | (1.088)            | (1.578)            | (0.847)            | (0.340)            | (0.416)            |
| <b>Coeff.</b>              | Total   | <b>8.087</b>       | <b>8.178</b>       | <b>7.033</b>       | 13.58              | <b>22.48</b>       | 15.39              | <b>26.31</b>       | <b>25.02</b>       | <b>15.90</b>       |
|                            |         | (3.193)            | (2.278)            | (3.104)            | (9.484)            | (8.133)            | (9.324)            | (4.095)            | (3.399)            | (4.242)            |
|                            | Parents | 3.391              | -1.919             | -0.402             | 20.98              | 21.47              | 6.023              | 21.05              | 19.94              | 0.313              |
|                            |         | (7.694)            | (4.907)            | (6.489)            | (22.41)            | (14.04)            | (19.57)            | (27.38)            | (14.94)            | (21.20)            |
|                            | Home    | 6.722              | -0.132             | 0.284              | -0.183             | -6.647             | -9.253             | -16.06             | -11.84             | -8.545             |
|                            |         | (9.665)            | (6.416)            | (8.062)            | (26.97)            | (15.59)            | (17.61)            | (15.31)            | (8.278)            | (8.011)            |
|                            | School  | -24.34             | -25.09             | -30.75             | -20.14             | -5.783             | -26.23             | -40.7              | -28.24             | 13.21              |
|                            | (44.96) | (30.65)            | (23.53)            | (102.7)            | (120.3)            | (120.8)            | (34.80)            | (64.15)            | (75.08)            |                    |
| <b>Reweighting error</b>   |         | -0.260             | -0.341             | -0.092             | 1.224              | -1.463             | 4.039              | -0.291             | -0.668             | -0.080             |
|                            |         | (0.602)            | (0.430)            | (0.601)            | (5.699)            | (5.718)            | (7.047)            | (0.909)            | (1.033)            | (1.506)            |
| <b>Constant</b>            |         | 24.48              | 39.05              | 42.16              | 13.5               | 14.11              | 51.77              | 70.97              | 45.97              | 8.491              |
|                            |         | (50.01)            | (37.34)            | (29.12)            | (105.3)            | (130.5)            | (130.1)            | (40.16)            | (62.47)            | (72.46)            |

Note: 5% or higher significance is **bold**, 10% is *italic*. Jackknife standard errors in parenthesis.

For Syria, overall characteristics and sub-groups (parents, home and school) are insignificant. Nonetheless, some significant background variables favour girls: more girls with high home possessions; more going to school in disadvantaged areas and boys at bottom and median have more access to computers either at school or at home. Total coefficient effect shows significant differences between boys and girls in median and top quantile. At the median, boys with native parents have higher returns (Appendix Table B.2), so perhaps parents favour boys.

For Tunisia, the overall coefficients effect which advantages boys dominates the characteristics effect which advantages girls across quantiles. The home characteristics effect favours girls with most of the subgroups of characteristics are significant (Appendix Table B.3). The coefficient effect variables show only significant effects for class size and its square term and the effects cancel out.

#### **b) Countries with no gender gap**

For Turkey (Table 6), there is no mean or quantile gender difference. Nonetheless, total characteristics effect advantages girls across quantiles. Disaggregating, home and parents characteristics benefit girls along the distribution and school characteristics favour girls at the median and top quantile. On the other hand, the coefficients effect favours boys at the median and top of distribution (but insignificant for each group of factors). If girls had the same characteristics as boys they would perform worse, but if they had similar education process they would perform better.

The overall effect is insignificant since the characteristics and the coefficient effects cancel out. The detailed decomposition (Appendix Table B.4) implies no persistent pattern of results across quantiles. Compared to boys, girls at bottom quantiles are more likely to be from native families and always speak the test language (Turkish) at home. At the median, girls are more likely to be from more educated families, with more books at home, more wealthy families, and residents of poorer areas. At the top quantile, relative to boys there are more girls from well-educated families with more books at home who go to school in poorer areas.

For Iran, at the bottom quantile the total gap and coefficients effect are significant (at 10%) favouring girls. Disaggregating by the types of variable, only community type coefficient

effect is significant, and is pro-girls in the bottom quantile (Appendix Table B.5). At the median the significant overall coefficients effect significantly favours girls; however, the significant coefficients (Appendix Table B.5) favour boys (who have books at home).

**Table 6: Quantile Decomposition by Main Categories: Countries with no Gender gap**

| VARIABLES                |                            | Turkey                   |                          |                          | Iran               |                    |                          |                   |
|--------------------------|----------------------------|--------------------------|--------------------------|--------------------------|--------------------|--------------------|--------------------------|-------------------|
|                          |                            | 10 <sup>th</sup> Q       | 50 <sup>th</sup> Q       | 90 <sup>th</sup> Q       | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q       |                   |
| <b>Boys</b>              |                            | 295.9<br>(4.821)         | 424.3<br>(5.205)         | 584.1<br>(8.536)         | 287.5<br>(7.344)   | 397.8<br>(6.456)   | 517.4<br>(9.796)         |                   |
| <b>Girls</b>             |                            | 298.1<br>(7.729)         | 424.3<br>(6.057)         | 577.7<br>(7.330)         | 303.7<br>(5.504)   | 404.5<br>(5.387)   | 514.9<br>(10.17)         |                   |
| <b>Difference</b>        |                            | -2.190<br>(6.928)        | -0.0535<br>(4.704)       | 6.344<br>(7.251)         | -16.24<br>(9.314)  | -6.689<br>(8.398)  | 2.475<br>(14.02)         |                   |
| <b>Char.</b>             | Total                      | <b>-5.654</b><br>(1.564) | <b>-10.08</b><br>(1.231) | <b>-10.32</b><br>(1.882) | 66.30<br>(75.28)   | 60.13<br>(85.85)   | 60.14<br>(69.05)         |                   |
|                          | Parents                    | -1.300<br>(0.786)        | <b>-2.003</b><br>(0.591) | <b>-1.947</b><br>(0.631) | 0.742<br>(3.540)   | 3.950<br>(4.671)   | 14.20<br>(16.60)         |                   |
|                          | Home                       | <b>-3.069</b><br>(1.372) | <b>-6.105</b><br>(1.019) | <b>-5.985</b><br>(1.492) | 12.53<br>(20.35)   | 20.16<br>(29.59)   | 21.61<br>(23.26)         |                   |
|                          | School                     | -0.692<br>(0.526)        | <b>-1.652</b><br>(0.638) | -2.044<br>(1.087)        | 58.97<br>(65.40)   | 39.48<br>(60.48)   | 24.61<br>(43.62)         |                   |
|                          | <b>Specification error</b> | -0.0758<br>(1.736)       | -0.245<br>(1.480)        | 0.744<br>(2.365)         | -12.74<br>(63.72)  | 38.92<br>(52.29)   | 69.76<br>(107.0)         |                   |
|                          | <b>Coeff.</b>              | Total                    | 4.147<br>(7.007)         | <b>9.724</b><br>(4.400)  | 14.73<br>(7.627)   | -63.05<br>(33.34)  | <b>-73.11</b><br>(33.48) | -21.31<br>(78.97) |
|                          | Parents                    | 63.17<br>(53.32)         | 33.59<br>(29.15)         | -0.641<br>(30.80)        | 11.04<br>(39.06)   | 23.44<br>(44.53)   | -68.43<br>(206.1)        |                   |
| Home                     | -58.48<br>(38.02)          | -5.044<br>(19.23)        | 4.201<br>(23.31)         | -27.84<br>(31.63)        | -23.56<br>(15.27)  | -1.405<br>(53.93)  |                          |                   |
| School                   | -115.9<br>(124.0)          | -6.92<br>(86.69)         | -78.34<br>(84.80)        | -27.61<br>(79.69)        | 38.33<br>(62.72)   | 131.6<br>(159.9)   |                          |                   |
| <b>Reweighting error</b> |                            | -0.607<br>(1.770)        | 0.550<br>(1.953)         | 1.194<br>(2.575)         | -6.753<br>(20.12)  | -32.630<br>(25.50) | -106.100<br>(117.1)      |                   |
| <b>Constant</b>          |                            | 117.4<br>(110.2)         | -10.85<br>(97.19)        | 96.29<br>(101.8)         | -25.09<br>(72.93)  | -112.3<br>(65.55)  | -69.71<br>(328.2)        |                   |

**Note:** 5% or higher significance is **bold**, 10% is *italic*. Jackknife standard errors in parenthesis.

The constant is significant at the median suggesting some generic effect that favours girls but is not captured by the variables included. At the top quantile, two specific characteristics effects favour boys (parents with university degrees and computer usage at home and

school); that is to say if a similar proportion of girls as boys come from highly educated families and have more computer usage at home and school, they would perform better in maths by 8 and 4 test score points, respectively. The specification error and reweighting error are large in absolute values but insignificant.

**Table 7: Quantile Decomposition by Main Categories: Countries with pro-girls gap**

| VARIABLES                  |         | Jordan             |                    |                    | Saudi Arabia       |                    |                    | Egypt              |                    |                    |
|----------------------------|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                            |         | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q |
| <b>Boys</b>                |         | 274.0              | 422.9              | 551.7              | 216.9              | 317.7              | 423.5              | 248.7              | 384.8              | 517.0              |
|                            |         | (7.372)            | (6.733)            | (4.355)            | (5.569)            | (5.359)            | (4.361)            | (7.345)            | (5.288)            | (5.725)            |
| <b>Girls</b>               |         | 311.9              | 441.2              | 559.9              | 250.8              | 342.0              | 434.1              | 266.1              | 399.2              | 524.1              |
|                            |         | (8.635)            | (7.779)            | (5.762)            | (5.555)            | (4.030)            | (3.902)            | (7.242)            | (6.077)            | (4.614)            |
| <b>Difference</b>          |         | <b>-37.86</b>      | <i>-18.38</i>      | <i>-8.183</i>      | <b>-33.88</b>      | <b>-24.27</b>      | <i>-10.55</i>      | <i>-17.38</i>      | <i>-14.37</i>      | <i>-7.164</i>      |
|                            |         | (10.99)            | (10.53)            | (7.273)            | (7.671)            | (7.012)            | (5.760)            | (9.133)            | (7.599)            | (7.788)            |
| <b>Char.</b>               | Total   | 18.51              | -4.246             | -2.832             | -1.477             | 13.65              | -9.293             | -4.031             | -3.588             | 0.823              |
|                            |         | (25.79)            | (28.49)            | (18.06)            | (35.21)            | (15.43)            | (42.98)            | (4.400)            | (2.847)            | (2.527)            |
|                            | Parents | -2.466             | -2.223             | -2.528             | 1.073              | 7.453              | <b>15.22</b>       | <b>-2.290</b>      | <b>-4.228</b>      | <b>-2.082</b>      |
|                            |         | (2.148)            | (3.489)            | (2.957)            | (5.518)            | (5.588)            | (8.347)            | (0.831)            | (0.645)            | (0.666)            |
|                            | Home    | -6.177             | -8.957             | -3.673             | -4.638             | -0.581             | -1.444             | 0.378              | -0.871             | 0.164              |
|                            |         | (7.161)            | (10.38)            | (5.652)            | (5.385)            | (5.493)            | (7.476)            | (1.287)            | (0.989)            | (1.065)            |
|                            | School  | 14.34              | 3.741              | 7.610              | 19.40              | 24.68              | -9.691             | 8.848              | 11.08              | 0.525              |
|                            | (21.76) | (24.68)            | (16.68)            | (38.42)            | (18.86)            | (38.27)            | (38.63)            | (37.25)            | (9.872)            |                    |
| <b>Specification error</b> |         | -3.584             | 3.663              | 5.902              | -48.68             | <b>-114.1</b>      | -18.70             | -0.689             | 0.642              | 0.0373             |
|                            |         | (9.892)            | (10.71)            | (8.817)            | (59.00)            | (24.91)            | (44.13)            | (1.342)            | (1.273)            | (1.217)            |
| <b>Coeff.</b>              | Total   | -15.00             | -22.95             | -28.07             | 48.44              | <b>115.1</b>       | 114.1              | -15.16             | -13.82             | 7.243              |
|                            |         | (26.72)            | (48.78)            | (32.72)            | (195.2)            | (18.45)            | (83.30)            | (13.47)            | (23.31)            | (9.706)            |
|                            | Parents | 110.6              | 57.15              | 0.604              | 12.74              | -8.199             | 25.88              | 9.373              | <b>33.71</b>       | 21.35              |
|                            |         | (108.1)            | (66.52)            | (26.89)            | (180.2)            | (23.24)            | (32.42)            | (26.11)            | (14.89)            | (16.81)            |
|                            | Home    | 37.38              | -129.1             | 54.42              | 30.26              | 1.513              | 84.01              | -2.974             | 5.199              | 19.61              |
|                            |         | (138.9)            | (147.1)            | (64.61)            | (178.1)            | (22.04)            | (73.35)            | (23.75)            | (20.86)            | (19.26)            |
|                            | School  | 58.02              | -190.7             | 155.5              | 194.6              | 50.76              | <b>109.3</b>       | 143.8              | 162.4              | -100.3             |
|                            | (184.1) | (276.1)            | (417.6)            | (341.4)            | (52.80)            | (50.80)            | (190.7)            | (375.5)            | (98.59)            |                    |
| <b>Reweighting error</b>   |         | -37.780            | 5.151              | 16.820             | -32.170            | <b>-38.93</b>      | -96.680            | 2.497              | 2.396              | -0.781             |
|                            |         | (34.74)            | (58.91)            | (32.07)            | (176.2)            | (13.84)            | (71.07)            | (11.81)            | (22.62)            | (6.461)            |
| <b>Constant</b>            |         | -246.6             | 254.3              | -249.2             | -233.2             | 70.66              | -117.1             | -181.5             | -235.0             | 62.06              |
|                            |         | (252.3)            | (317.1)            | (476.0)            | (686.5)            | (69.64)            | (73.63)            | (224.8)            | (447.9)            | (115.3)            |

Note: 5% or higher significance is **bold**, 10% is *italic*. Jackknife standard errors in parenthesis.

### **c) Countries with pro-girls gap**

There are some differences across quantiles for countries where girls outperform boys (Table 7). The overall significant gender gap in performance decreases across quantiles in the three countries except for the top quantile in Jordan and Egypt. Overall effects due to characteristics and coefficient are insignificant except for the median coefficients effect in Saudi Arabia.

For Jordan, the quantiles' detailed decomposition (Appendix Table B.6) does not identify any individual characteristic that favours girls. Only one coefficient significantly favours girls (being resident of a larger community compared to small at the median).

For Saudi Arabia, the overall effect due to coefficients is significant at the median with significant specification and reweighting error indicating problems with the weighting factor and large reweighted error difference indicating probability of nonlinear relationship between maths scores and the covariates. These issues are addressed below. At the top quantile, parents' characteristics and returns to schools characteristics favour boys.

For Egypt, the overall effects due to characteristics and coefficients are insignificant; some individual parents and home characteristics are significant across quantiles and favour girls. The coefficient effects are mixed: medium school resources returns favour girls compared to high school resources at median and top quantile; returns to disadvantaged poor area schools favour boys at top quantile and native parents' returns at median advantage boys.

#### **4.3 Quantile decomposition results for Saudi Arabia and Iran (without teachers' variables)**

The estimates of the uniform quantile decompositions across MENA countries indicate some large specification error and reweighting error for Saudi Arabia and Iran. The misspecification of the reweighting factor implies reweighting error and the specification error suggests a nonlinear relationship. The two countries have single sex education system where boys and girls attend separate schools. This is related to teacher's gender as they should be the same as student's gender. The overlapping assumption required for the decomposition to be consistent might be violated by including teacher's covariates in the regressions estimates, so estimates without teachers' covariates are presented in Table 8. The

specification and reweighting errors are now insignificant and this supports the argument of the gender separation effect related to teachers' covariates.

**Table 8: Quantile Decomposition by Main Categories: Saudi Arabia and Iran (without teachers' variables)**

| VARIABLES                  |         | Saudi Arabia       |                    |                    | Iran               |                    |                    |
|----------------------------|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                            |         | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q | 10 <sup>th</sup> Q | 50 <sup>th</sup> Q | 90 <sup>th</sup> Q |
| <b>Boys</b>                |         | 216.9              | 317.7              | 423.5              | 287.5              | 397.8              | 517.4              |
|                            |         | (5.569)            | (5.359)            | (4.361)            | (7.344)            | (6.456)            | (9.796)            |
| <b>Girls</b>               |         | 250.8              | 342.0              | 434.1              | 303.7              | 404.5              | 514.9              |
|                            |         | (5.555)            | (4.030)            | (3.902)            | (5.504)            | (5.387)            | (10.17)            |
| <b>Difference</b>          |         | <b>-33.88</b>      | <b>-24.27</b>      | <b>-10.55</b>      | <b>-16.24</b>      | <b>-6.689</b>      | <b>2.475</b>       |
|                            |         | (7.671)            | (7.012)            | (5.760)            | (9.314)            | (8.398)            | (14.02)            |
| <b>Char.</b>               | Total   | <b>-8.711</b>      | <b>-7.853</b>      | <b>-7.890</b>      | -2.966             | -4.477             | -4.741             |
|                            |         | <b>(4.187)</b>     | <b>(2.676)</b>     | <b>(3.023)</b>     | (2.661)            | (2.049)            | (3.156)            |
|                            | Parents | 0.327              | 0.369              | 1.325              | -0.454             | <b>-0.954</b>      | -0.739             |
|                            |         | (0.808)            | (0.756)            | (0.960)            | (0.548)            | <b>(0.457)</b>     | (0.770)            |
|                            | Home    | <b>-10.10</b>      | <b>-9.769</b>      | <b>-10.77</b>      | <b>-2.407</b>      | <b>-2.412</b>      | -2.144             |
|                            |         | <b>(2.719)</b>     | <b>(1.592)</b>     | <b>(2.854)</b>     | <b>(1.041)</b>     | <b>(1.228)</b>     | (1.601)            |
|                            | School  | 0.0677             | 0.851              | 0.676              | 0.836              | -0.768             | -1.820             |
|                            | (2.476) | (1.952)            | (1.944)            | (1.970)            | (1.614)            | (2.003)            |                    |
| <b>Specification error</b> |         | 2.363              | 1.332              | 1.839              | -0.0782            | -0.0772            | 0.614              |
|                            |         | (2.323)            | (2.309)            | (2.183)            | (1.465)            | (1.367)            | (2.705)            |
| <b>Coeff.</b>              | Total   | <b>-33.70</b>      | <b>-22.78</b>      | <b>-7.794</b>      | <b>-15.33</b>      | 1.336              | 11.92              |
|                            |         | <b>(11.25)</b>     | <b>(7.109)</b>     | (8.031)            | <b>(7.668)</b>     | (6.818)            | (9.614)            |
|                            | Parents | -0.676             | -8.123             | -27.59             | 31.66              | 41.11              | 12.00              |
|                            |         | (22.88)            | (13.27)            | (17.45)            | (35.15)            | (23.51)            | (21.31)            |
|                            | Home    | 22.56              | 8.300              | 22.64              | 8.527              | 10.03              | -5.624             |
|                            |         | (28.04)            | (20.51)            | (14.23)            | (13.47)            | (10.72)            | (14.70)            |
|                            | School  | 37.03              | 46.96              | 29.96              | 63.35              | 15.18              | 76.60              |
|                            | (46.16) | (31.83)            | (48.47)            | (83.85)            | (64.49)            | (71.36)            |                    |
| <b>Reweighting error</b>   |         | 6.165              | 5.027              | 3.290              | 2.130              | -3.470             | -5.320             |
|                            |         | (8.513)            | (5.669)            | (7.066)            | (5.503)            | (6.714)            | (9.232)            |
| <b>Constant</b>            |         | -99.63             | -74.18             | -35.42             | -118.9             | -68.87             | -75.88             |
|                            |         | (53.75)            | (40.10)            | (59.43)            | (84.82)            | (70.55)            | (79.53)            |

Note: 5% or higher significance is **bold**, 10% is *italic*. Jackknife standard errors in parenthesis.

There are changes in the detailed decomposition results for Saudi Arabia and Iran: the overall effect due to characteristics is significant in favour of girls across quantiles in Saudi Arabia and at the median for Iran. The coefficient effect is larger than characteristics effect at bottom and median favouring girls in Saudi Arabia. The total significant gap between boys and girls at the bottom quantile in Iran is mostly driven by the coefficient effect. At the median in Iran, however the total differentials gap is insignificant, the overall effect due to

characteristics is significant and favouring girls. The significant effects of characteristics are mostly driven by the home characteristics that favour girls in both countries. The only significant effect of coefficient is for Iranian parents favouring boys.

## 5. Conclusion

This paper analyses the differences between maths test scores of boys and girls for Algeria, Egypt, Jordan, Iran, Saudi Arabia, Syria, Tunisia and Turkey with mean and quantile gender gap decompositions. The decomposition estimates present a mixed picture within and across countries so it is difficult to identify a general pattern of the determinants of gender inequalities in MENA. In part this is because decomposition analysis is complicated by the need for distributional assumptions. It is also because the TIMSS test scores are difficult to analyse as one has to use the range of plausible values. Mostly, however, it is because the determinants of test scores, and hence of gender differences, are difficult to identify for any country and there are notable differences across countries (including cultural and traditions). Given these caveats, some tentative implications can be drawn.

The gender-gap of students' maths test scores split MENA selected countries into three groups: first, pro-boys countries where the maths achievements gap is in favour of boys (Algeria, Syria and Tunisia); second, pro-girls countries where girls outperform boys (Jordan, Saudi Arabia and Egypt); third, gender neutral countries (Iran and Turkey). In countries where girls outperform boys the gender gap in performance is greater than that of pro-boys countries.

The gender gap of maths performance is not always consistent with the findings of the gender indicator from the education production functions for some countries. Badr et al., (2012) control for school, teacher and home background variables in the education production function and find that student's gender indicator shows a significant effect on academic achievement in five of the eight countries. A positive significant effect indicating boys outperform girls is found in Algeria, Syria, Tunisia where the gap is pro-boy, but also Turkey; a negative effect so that girls outperform boys is found in Egypt (which is pro-girl); the coefficient is insignificant in Saudi Arabia, Iran and Jordan. The gender effect is in

favour of boys when controlling for the unobservable school variables in the school fixed effects model for Iran.

These findings have been investigated in detail through gender decomposition analysis of the maths achievements on the mean and across the distribution by quantile regression. In countries where there is a pro-boys gap, the coefficients effect at the mean and across quantiles dominates the characteristics effect, which suggests that the transformation process of certain variables favours boys, though none of the covariates' groups show significant effects. From the policy point of view, the school effect for these countries does not show any significant effect. The coefficients effect confirms the findings from the education production functions that the gender effect is favouring boys in Algeria, Syria, Tunisia and Turkey.

The pro-girls countries show the same patterns in general. Although, gender indicators were insignificant in Jordan, Saudi Arabia and Iran, the quantile decomposition implies that gender gaps are not consistent across quantiles and supports the average effect on the production functions. The large gaps at the bottom quantiles and the median for Saudi Arabia and Jordan compared to the top suggest possible pure differences between boys and girls which could be neutralized by the top quantile small gap to imply insignificant effect of the gender indicator.

There is a general tendency of the gender-gap to close toward the top quantile in almost all countries except for Syria. The general conclusion to be drawn from this analysis is that though there is a gender gap in learning, there are no clear patterns or factors influencing this gap from our controls. The mechanisms by which the gaps are created might need more investigation in terms of, for example, the school type and private or group tutoring which might not be captured by decomposition analysis.



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## Appendix A: Mean Decompositions

Table A.1: Descriptive statistics of tests scores in MENA countries

|                 | Algeria |       | Egypt |       | Iran  |       | Jordan |       | Saudi Arabia |       | Syria |       | Tunisia |       | Turkey |       |
|-----------------|---------|-------|-------|-------|-------|-------|--------|-------|--------------|-------|-------|-------|---------|-------|--------|-------|
| Boy(B),Girl(G)  | G       | B     | G     | B     | G     | B     | G      | B     | G            | B     | G     | B     | G       | B     | G      | B     |
| <b>N (%)</b>    | 49      | 51    | 49    | 51    | 46    | 54    | 48     | 52    | 48           | 52    | 52    | 48    | 52      | 48    | 47     | 53    |
| <b>mean</b>     | 385     | 390   | 399   | 384   | 407   | 400   | 438    | 418   | 343          | 320   | 389   | 404   | 410     | 432   | 431    | 432   |
| <b>max</b>      | 574     | 580   | 707   | 743   | 678   | 727   | 694    | 746   | 550          | 587   | 624   | 678   | 641     | 624   | 820    | 831   |
| <b>min</b>      | 90      | 216   | 87    | 75    | 157   | 163   | 128    | 41    | 108          | 94    | 142   | 121   | 214     | 213   | 121    | 112   |
| <b>range</b>    | 484     | 363   | 620   | 668   | 521   | 564   | 566    | 705   | 443          | 493   | 482   | 557   | 427     | 411   | 699    | 718   |
| <b>s.d.</b>     | 59      | 57    | 97    | 101   | 82    | 89    | 95     | 106   | 70           | 79    | 80    | 84    | 67      | 63    | 106    | 109   |
| <b>se(mean)</b> | 1.14    | 1.09  | 1.69  | 1.75  | 1.94  | 1.90  | 1.80   | 2.14  | 1.47         | 1.76  | 1.61  | 1.74  | 1.46    | 1.42  | 2.32   | 2.23  |
| <b>skewness</b> | 0.06    | 0.04  | -0.08 | -0.04 | 0.25  | 0.16  | -0.17  | -0.20 | -0.05        | 0.00  | 0.01  | -0.07 | 0.19    | 0.05  | 0.23   | 0.31  |
| <b>kurtosis</b> | 2.98    | 2.82  | 2.61  | 2.64  | 2.93  | 2.86  | 2.65   | 2.55  | 2.74         | 2.80  | 2.85  | 2.89  | 2.82    | 2.86  | 2.68   | 2.89  |
| <b>p10</b>      | 310     | 317   | 269   | 250   | 307   | 285   | 312    | 275   | 255          | 220   | 290   | 297   | 325     | 352   | 300    | 297   |
| <b>p25</b>      | 345     | 351   | 333   | 311   | 347   | 339   | 372    | 340   | 294          | 266   | 335   | 345   | 364     | 389   | 356    | 356   |
| <b>p50</b>      | 383     | 390   | 400   | 386   | 404   | 399   | 440    | 420   | 344          | 319   | 387   | 406   | 405     | 431   | 422    | 424   |
| <b>p75</b>      | 425     | 428   | 470   | 456   | 461   | 457   | 509    | 501   | 393          | 374   | 444   | 463   | 457     | 474   | 506    | 503   |
| <b>p90</b>      | 463     | 467   | 524   | 513   | 514   | 516   | 558    | 551   | 433          | 425   | 494   | 513   | 500     | 514   | 575    | 581   |
| <b>CV</b>       | 15.32   | 14.62 | 24.31 | 26.30 | 20.15 | 22.25 | 21.69  | 25.36 | 20.41        | 24.69 | 20.57 | 20.79 | 16.34   | 14.58 | 24.59  | 25.23 |

Table A.2: Algeria Mean Decomposition

| VARIABLES           | Two fold decomposition<br>Boys are reference group |                          | Two fold decomposition<br>Girls are reference group |                                  | Three fold decomposition<br>Girls are reference group |                          |                           | Three fold decomposition<br>Boys are reference group |                     |                       |
|---------------------|--|--------------------------|---|----------------------------------|---|--------------------------|---------------------------|--|---------------------|-----------------------|
|                     | Char.  | Coef.                    | Char.   | Coef.                            | Char.   | Coef.                    | Interactions              | Char.  | Coef.               | Interactions          |
| Lower-sec EDC       | 0.00565<br>(0.109)                                 | -0.681<br>(1.378)        | 0.00381<br>(0.101)                                  | -0.679<br>(1.377)                | 0.00381<br>(0.101)                                    | -0.681<br>(1.378)        | 0.00184<br>(0.0103)       | 0.00565<br>(0.109)                                   | -0.679<br>(1.377)   | -0.00184<br>(0.0103)  |
| Upper-sec           | -0.156<br>(0.159)                                  | 0.593<br>(1.264)         | -0.0579<br>(0.152)                                  | 0.495<br>(1.055)                 | -0.0579<br>(0.152)                                    | 0.495<br>(1.055)         | -0.0980<br>(0.213)        | -0.156<br>(0.159)                                    | 0.593<br>(1.055)    | 0.0980<br>(0.213)     |
| Post-sec not UNI    | -0.110<br>(0.115)                                  | -0.177<br>(0.949)        | -0.143<br>(0.148)                                   | -0.144<br>(0.774)                | -0.143<br>(0.148)                                     | -0.177<br>(0.949)        | 0.0329<br>(0.176)         | -0.110<br>(0.115)                                    | -0.144<br>(0.774)   | -0.0329<br>(0.176)    |
| University degree   | 0.0414<br>(0.0916)                                 | 0.529<br>(0.773)         | -0.0526<br>(0.131)                                  | 0.623<br>(0.909)                 | -0.0526<br>(0.131)                                    | 0.529<br>(0.773)         | 0.0940<br>(0.140)         | 0.0414<br>(0.0916)                                   | 0.623<br>(0.909)    | -0.0940<br>(0.140)    |
| One bookcases       | -0.715**<br>(0.292)                                | 1.140<br>(1.038)         | -0.421**<br>(0.183)                                 | 0.846<br>(0.762)                 | -0.421**<br>(0.183)                                   | 1.140<br>(1.038)         | -0.294<br>(0.286)         | -0.715**<br>(0.292)                                  | 0.846<br>(0.762)    | 0.294<br>(0.286)      |
| Two bookcases       | -0.0324<br>(0.0467)                                | -0.113<br>(0.550)        | -0.0444<br>(0.0445)                                 | -0.101<br>(0.491)                | -0.0444<br>(0.0445)                                   | -0.113<br>(0.550)        | 0.0119<br>(0.0597)        | -0.0324<br>(0.0467)                                  | -0.101<br>(0.491)   | -0.0119<br>(0.0597)   |
| Home possess H      | 0.0482<br>(0.166)                                  | -1.656<br>(2.145)        | 0.0664<br>(0.254)                                   | -1.674<br>(2.172)                | 0.0664<br>(0.254)                                     | -1.656<br>(2.145)        | -0.0182<br>(0.0931)       | 0.0482<br>(0.166)                                    | -1.674<br>(2.172)   | 0.0182<br>(0.0931)    |
| Home possess M      | -0.354*<br>(0.214)                                 | 1.033<br>(3.266)         | -0.307<br>(0.205)                                   | 0.987<br>(3.116)                 | -0.307<br>(0.205)                                     | 1.033<br>(3.266)         | -0.0468<br>(0.152)        | -0.354*<br>(0.214)                                   | 0.987<br>(3.116)    | 0.0468<br>(0.152)     |
| TL spoken Als       | -0.00515<br>(0.0818)                               | -0.662<br>(1.678)        | 0.0518<br>(0.121)                                   | -0.719<br>(1.829)                | 0.0518<br>(0.121)                                     | -0.662<br>(1.678)        | -0.0570<br>(0.155)        | -0.00515<br>(0.0818)                                 | -0.719<br>(1.829)   | 0.0570<br>(0.155)     |
| PC at H&SCL         | -0.245*<br>(0.148)                                 | 0.333<br>(0.430)         | -0.418<br>(0.255)                                   | 0.507<br>(0.654)                 | -0.418<br>(0.255)                                     | 0.333<br>(0.430)         | 0.174<br>(0.239)          | -0.245*<br>(0.148)                                   | 0.507<br>(0.654)    | -0.174<br>(0.239)     |
| PC at H/SCL         | -0.0130<br>(0.0544)                                | -0.124<br>(1.478)        | -0.0115<br>(0.0738)                                 | -0.125<br>(1.496)                | -0.0115<br>(0.0738)                                   | -0.124<br>(1.478)        | -0.00146<br>(0.0283)      | -0.0130<br>(0.0544)                                  | -0.125<br>(1.496)   | 0.00146<br>(0.0283)   |
| Male teacher        | 0.110<br>(0.109)                                   | -0.260<br>(2.583)        | 0.122<br>(0.168)                                    | -0.272<br>(2.706)                | 0.122<br>(0.168)                                      | -0.260<br>(2.583)        | -0.0118<br>(0.130)        | 0.110<br>(0.109)                                     | -0.272<br>(2.706)   | 0.0118<br>(0.130)     |
| T. Experience       | -0.0119<br>(0.0905)                                | 0.204<br>(3.918)         | -0.0124<br>(0.0868)                                 | 0.205<br>(3.921)                 | -0.0124<br>(0.0868)                                   | 0.204<br>(3.918)         | 0.000484<br>(0.0126)      | -0.0119<br>(0.0905)                                  | 0.205<br>(3.921)    | -0.000484<br>(0.0126) |
| T. Certificate!     | -0.000789<br>(0.0276)                              | -4.735*<br>(2.485)       | 0.0427<br>(0.125)                                   | -4.778*<br>(2.532)               | 0.0427<br>(0.125)                                     | -4.735*<br>(2.485)       | -0.0435<br>(0.136)        | -0.000789<br>(0.0276)                                | -4.778*<br>(2.532)  | 0.0435<br>(0.136)     |
| M SCL RCS           | 0.0288<br>(0.0450)                                 | -2.021<br>(4.420)        | 0.0101<br>(0.0512)                                  | -2.002<br>(4.384)                | 0.0101<br>(0.0512)                                    | -2.021<br>(4.420)        | 0.0187<br>(0.0381)        | 0.0288<br>(0.0450)                                   | -2.002<br>(4.384)   | -0.0187<br>(0.0381)   |
| L SCL RSC           | -0.0172<br>(0.0353)                                | 0.663<br>(0.688)         | 0.0113<br>(0.0407)                                  | 0.634<br>(0.656)                 | 0.0113<br>(0.0407)                                    | 0.663<br>(0.688)         | -0.0285<br>(0.0491)       | -0.0172<br>(0.0353)                                  | 0.634<br>(0.656)    | 0.0285<br>(0.0491)    |
| T. UNI Degree       | -0.00923<br>(0.0431)                               | 0.381<br>(0.701)         | -0.0286<br>(0.0534)                                 | 0.401<br>(0.735)                 | -0.0286<br>(0.0534)                                   | 0.381<br>(0.701)         | 0.0194<br>(0.0355)        | -0.00923<br>(0.0431)                                 | 0.401<br>(0.735)    | -0.0194<br>(0.0355)   |
| COMMU.>50000        | 0.0163<br>(0.0482)                                 | -2.482<br>(1.777)        | -0.0522<br>(0.0820)                                 | -2.414<br>(1.736)                | -0.0522<br>(0.0820)                                   | -2.482<br>(1.777)        | 0.0685<br>(0.0906)        | 0.0163<br>(0.0482)                                   | -2.414<br>(1.736)   | -0.0685<br>(0.0906)   |
| Disadv              | -0.00304<br>(0.0364)                               | -0.873<br>(1.817)        | -0.0184<br>(0.0533)                                 | -0.858<br>(1.794)                | -0.0184<br>(0.0533)                                   | -0.873<br>(1.817)        | 0.0154<br>(0.0434)        | -0.00304<br>(0.0364)                                 | -0.858<br>(1.794)   | -0.0154<br>(0.0434)   |
| Class size          | 0.568<br>(0.739)                                   | -38.13<br>(34.17)        | 1.183<br>(1.082)                                    | -38.75<br>(34.69)                | 1.183<br>(1.082)                                      | -38.13<br>(34.17)        | -0.615<br>(0.630)         | 0.568<br>(0.739)                                     | -38.75<br>(34.69)   | 0.615<br>(0.630)      |
| Class size sq       | -0.126<br>(0.332)                                  | 21.44<br>(22.66)         | -0.382<br>(0.555)                                   | 21.70<br>(22.91)                 | -0.382<br>(0.555)                                     | 21.44<br>(22.66)         | 0.256<br>(0.355)          | -0.126<br>(0.332)                                    | 21.70<br>(22.91)    | -0.256<br>(0.355)     |
| Constant            |  | 35.61*<br>(18.87)        |   | 35.61*<br>(18.87)                |   | 35.61*<br>(18.87)        |                           |  | 35.61*<br>(18.87)   |                       |
| Total (Expl/Unexpl) | -1.749***<br>(0.577)                               | 7.050***<br>(1.828)      | -1.327**<br>(0.566)                                 | 6.629***<br>(1.816)              | -1.327**<br>(0.566)                                   | 7.050***<br>(1.828)      | -0.422<br>(0.661)         | -1.749***<br>(0.577)                                 | 6.629***<br>(1.816) | 0.422<br>(0.661)      |
| Raw Gap             |  | Boys<br>389.4<br>(2.229) | Girls<br>384.1<br>(2.422)                           | Total Gap<br>5.302***<br>(1.805) |   | Boys<br>389.4<br>(2.229) | Girls<br>384.1<br>(2.422) | Total Gap<br>5.302***<br>(1.805)                     |                     |                       |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (parents nationality not included in Algeria) dummy for missing included.

Table A.3: Syria Mean Decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                           | Two fold decomposition<br>Girls are reference group |                    | Three fold decomposition<br>Girls are reference group |                           |                                  | Three fold decomposition<br>Boys are reference group |                    |                       |
|-------------------|--|---------------------------|---|--------------------|---|---------------------------|----------------------------------|--|--------------------|-----------------------|
|                   | Char.  | Coef.                     | Char.   | Coef.              | Char.   | Coef.                     | Interactions                     | Char.  | Coef.              | Interactions          |
| Lower-sec EDC     | -0.0310<br>(0.119)                                 | 0.734<br>(2.460)          | 0.00730<br>(0.0975)                                 | 0.696<br>(2.333)   | 0.00730<br>(0.0975)                                   | 0.734<br>(2.460)          | -0.0383<br>(0.133)               | -0.0310<br>(0.119)                                   | 0.696<br>(2.333)   | 0.0383<br>(0.133)     |
| Upper-sec         | 0.0960<br>(0.347)                                  | 1.765<br>(2.528)          | 0.375<br>(0.308)                                    | 1.486<br>(2.121)   | 0.375<br>(0.308)                                      | 1.765<br>(2.528)          | -0.279<br>(0.409)                | 0.0960<br>(0.347)                                    | 1.486<br>(2.121)   | 0.279<br>(0.409)      |
| Post-sec not UNI  | 0.373<br>(0.334)                                   | 2.339<br>(2.426)          | 0.182<br>(0.234)                                    | 2.530<br>(2.631)   | 0.182<br>(0.234)                                      | 2.339<br>(2.426)          | 0.191<br>(0.217)                 | 0.373<br>(0.334)                                     | 2.530<br>(2.631)   | -0.191<br>(0.217)     |
| University degree | 0.00259<br>(0.320)                                 | 0.181<br>(1.666)          | 0.00243<br>(0.359)                                  | 0.182<br>(1.662)   | 0.00243<br>(0.359)                                    | 0.181<br>(1.666)          | 0.000160<br>(0.0448)             | 0.00259<br>(0.320)                                   | 0.182<br>(1.662)   | -0.000160<br>(0.0448) |
| Native parents    | -1.129**<br>(0.532)                                | 9.430<br>(6.965)          | -0.601<br>(0.394)                                   | 8.903<br>(6.576)   | -0.601<br>(0.394)                                     | 9.430<br>(6.965)          | -0.527<br>(0.450)                | -1.129**<br>(0.532)                                  | 8.903<br>(6.576)   | 0.527<br>(0.450)      |
| One bookcases     | -0.0666<br>(0.101)                                 | -0.395<br>(1.646)         | -0.0864<br>(0.129)                                  | -0.375<br>(1.558)  | -0.0864<br>(0.129)                                    | -0.395<br>(1.646)         | 0.0198<br>(0.0902)               | -0.0666<br>(0.101)                                   | -0.375<br>(1.558)  | -0.0198<br>(0.0902)   |
| Two bookcases     | -0.0179<br>(0.0571)                                | 0.409<br>(0.952)          | 0.00119<br>(0.0416)                                 | 0.390<br>(0.906)   | 0.00119<br>(0.0416)                                   | 0.409<br>(0.952)          | -0.0191<br>(0.0840)              | -0.0179<br>(0.0571)                                  | 0.390<br>(0.906)   | 0.0191<br>(0.0840)    |
| Home possess H    | -1.883<br>(1.288)                                  | 0.583<br>(3.853)          | -1.806<br>(1.236)                                   | 0.506<br>(3.373)   | -1.806<br>(1.236)                                     | 0.583<br>(3.853)          | -0.0769<br>(0.485)               | -1.883<br>(1.288)                                    | 0.506<br>(3.373)   | 0.0769<br>(0.485)     |
| Home possess M    | 0.429<br>(0.615)                                   | 1.417<br>(4.344)          | 0.384<br>(0.500)                                    | 1.462<br>(4.493)   | 0.384<br>(0.500)                                      | 1.417<br>(4.344)          | 0.0442<br>(0.174)                | 0.429<br>(0.615)                                     | 1.462<br>(4.493)   | -0.0442<br>(0.174)    |
| TL spoken Als     | 0.150<br>(0.311)                                   | 2.651<br>(5.908)          | -0.000406<br>(0.229)                                | 2.801<br>(6.224)   | -0.000406<br>(0.229)                                  | 2.651<br>(5.908)          | 0.151<br>(0.335)                 | 0.150<br>(0.311)                                     | 2.801<br>(6.224)   | -0.151<br>(0.335)     |
| PC at H&SCL       | 0.328<br>(0.415)                                   | -3.167<br>(3.515)         | 0.155<br>(0.423)                                    | -2.995<br>(3.322)  | 0.155<br>(0.423)                                      | -3.167<br>(3.515)         | 0.173<br>(0.194)                 | 0.328<br>(0.415)                                     | -2.995<br>(3.322)  | -0.173<br>(0.194)     |
| PC at H/SCL       | 1.057*<br>(0.572)                                  | -6.237<br>(3.882)         | 0.359<br>(0.390)                                    | -5.539<br>(3.413)  | 0.359<br>(0.390)                                      | -6.237<br>(3.882)         | 0.698<br>(0.535)                 | 1.057*<br>(0.572)                                    | -5.539<br>(3.413)  | -0.698<br>(0.535)     |
| Male teacher      | 1.332<br>(2.062)                                   | 5.076<br>(4.528)          | -1.340<br>(1.741)                                   | 7.749<br>(6.708)   | -1.340<br>(1.741)                                     | 5.076<br>(4.528)          | 2.305<br>(2.305)                 | 1.332<br>(2.062)                                     | 7.749<br>(6.708)   | -2.305<br>(2.305)     |
| T. Experience     | 0.134<br>(0.778)                                   | -11.87<br>(10.40)         | -0.907<br>(1.295)                                   | -10.83<br>(9.549)  | -0.907<br>(1.295)                                     | -11.87<br>(10.40)         | 1.041<br>(1.502)                 | 0.134<br>(0.778)                                     | -10.83<br>(9.549)  | -1.041<br>(1.502)     |
| T. Certificate    | 0.190<br>(0.627)                                   | -2.959<br>(10.08)         | 0.125<br>(0.329)                                    | -2.893<br>(9.970)  | 0.125<br>(0.329)                                      | -2.959<br>(10.08)         | 0.0655<br>(0.432)                | 0.190<br>(0.627)                                     | -2.893<br>(9.970)  | -0.0655<br>(0.432)    |
| M SCL RCS         | 0.00862<br>(0.129)                                 | -11.63<br>(18.59)         | 0.0924<br>(0.968)                                   | -11.72<br>(18.74)  | 0.0924<br>(0.968)                                     | -11.63<br>(18.59)         | -0.0837<br>(0.919)               | 0.00862<br>(0.129)                                   | -11.72<br>(18.74)  | 0.0837<br>(0.919)     |
| L SCL RSC         | 0.0248<br>(1.639)                                  | -0.736<br>(0.926)         | 2.163<br>(2.674)                                    | -2.875<br>(3.948)  | 2.163<br>(2.674)                                      | -0.736<br>(0.926)         | -2.139<br>(3.107)                | 0.0248<br>(1.639)                                    | -2.875<br>(3.948)  | 2.139<br>(3.107)      |
| T. UNI Degree     | 0.953<br>(1.003)                                   | 2.759<br>(4.622)          | 0.463<br>(0.786)                                    | 3.248<br>(5.450)   | 0.463<br>(0.786)                                      | 2.759<br>(4.622)          | 0.489<br>(0.878)                 | 0.953<br>(1.003)                                     | 3.248<br>(5.450)   | -0.489<br>(0.878)     |
| COMMU.>5000       | 0.142<br>(0.455)                                   | 2.411<br>(5.542)          | 0.395<br>(0.775)                                    | 2.158<br>(5.009)   | 0.395<br>(0.775)                                      | 2.411<br>(5.542)          | -0.253<br>(0.674)                | 0.142<br>(0.455)                                     | 2.158<br>(5.009)   | 0.253<br>(0.674)      |
| Disadv            | -3.889<br>(2.976)                                  | -9.660*<br>(5.590)        | -1.250<br>(1.216)                                   | -12.30*<br>(6.973) | -1.250<br>(1.216)                                     | -9.660*<br>(5.590)        | -2.639<br>(2.529)                | -3.889<br>(2.976)                                    | -12.30*<br>(6.973) | 2.639<br>(2.529)      |
| Class size        | 3.612<br>(3.642)                                   | 55.55<br>(222.0)          | 6.081<br>(12.71)                                    | 53.08<br>(211.2)   | 6.081<br>(12.71)                                      | 55.55<br>(222.0)          | -2.468<br>(11.08)                | 3.612<br>(3.642)                                     | 53.08<br>(211.2)   | 2.468<br>(11.08)      |
| Class size sq     | -1.727<br>(2.453)                                  | -33.52<br>(127.2)         | -3.707<br>(9.054)                                   | -31.54<br>(119.6)  | -3.707<br>(9.054)                                     | -33.52<br>(127.2)         | 1.979<br>(7.974)                 | -1.727<br>(2.453)                                    | -31.54<br>(119.6)  | -1.979<br>(7.974)     |
| Constant          |  | 12.95<br>(112.7)          |   | 12.95<br>(112.7)   |   | 12.95<br>(112.7)          |                                  |  | 12.95<br>(112.7)   |                       |
| Total (char/coef) | -1.760<br>(5.133)                                  | 18.19***<br>(6.226)       | -0.507<br>(5.524)                                   | 16.94**<br>(6.892) | -0.507<br>(5.524)                                     | 18.19***<br>(6.226)       | -1.253<br>(6.226)                | -1.760<br>(5.133)                                    | 16.94**<br>(6.892) | 1.253<br>(5.261)      |
| Raw Gap           | Boys<br>403.8<br>(5.061)                           | Girls<br>387.3<br>(4.390) | Total Gap<br>16.43***<br>(5.653)                    |                    | Boys<br>403.8<br>(5.061)                              | Girls<br>387.3<br>(4.390) | Total Gap<br>16.43***<br>(5.653) |  |                    |                       |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A.4: Tunisia Mean decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                          | Two fold decomposition<br>Girls are reference group |                                  | Three fold decomposition<br>Girls are reference group |                          |                           | Three fold decomposition<br>Boys are reference group |                     |                      |
|-------------------|--|--------------------------|---|----------------------------------|---|--------------------------|---------------------------|--|---------------------|----------------------|
|                   | Char.  | Coef.                    | Char.   | Coef.                            | Char.   | Coef.                    | Interactions              | Char.  | Coef.               | Interactions         |
| Lower-sec EDC     | 0.234<br>(0.220)                                   | 1.315<br>(2.432)         | 0.384<br>(0.280)                                    | 1.165<br>(2.161)                 | 0.384<br>(0.280)                                      | 1.315<br>(2.432)         | -0.150<br>(0.279)         | 0.234<br>(0.220)                                     | 1.165<br>(2.161)    | 0.150<br>(0.279)     |
| Upper-sec         | 0.0272<br>(0.0942)                                 | 2.503<br>(2.052)         | 0.157<br>(0.157)                                    | 2.374<br>(1.938)                 | 0.157<br>(0.157)                                      | 2.503<br>(2.052)         | -0.130<br>(0.138)         | 0.0272<br>(0.0942)                                   | 2.374<br>(1.938)    | 0.130<br>(0.138)     |
| Post-sec not UNI  | -0.00284<br>(0.0449)                               | -0.818<br>(1.577)        | 0.0176<br>(0.0541)                                  | -0.838<br>(1.623)                | 0.0176<br>(0.0541)                                    | -0.818<br>(1.577)        | -0.0205<br>(0.0904)       | -0.00284<br>(0.0449)                                 | -0.838<br>(1.623)   | 0.0205<br>(0.0904)   |
| University degree | 0.182<br>(0.174)                                   | 0.0261<br>(1.248)        | 0.179<br>(0.206)                                    | 0.0296<br>(1.420)                | 0.179<br>(0.206)                                      | 0.0261<br>(1.248)        | 0.00356<br>(0.173)        | 0.182<br>(0.174)                                     | 0.0296<br>(1.420)   | -0.00356<br>(0.173)  |
| Native parents    | -0.780**<br>(0.378)                                | 11.11<br>(7.716)         | -0.467<br>(0.318)                                   | 10.79<br>(7.506)                 | -0.467<br>(0.318)                                     | 11.11<br>(7.716)         | -0.313<br>(0.228)         | -0.780**<br>(0.378)                                  | 10.79<br>(7.506)    | 0.313<br>(0.228)     |
| One bookcases     | -0.432*<br>(0.230)                                 | 0.502<br>(1.566)         | -0.379*<br>(0.230)                                  | 0.450<br>(1.402)                 | -0.379*<br>(0.230)                                    | 0.502<br>(1.566)         | -0.0527<br>(0.165)        | -0.432*<br>(0.230)                                   | 0.450<br>(1.402)    | 0.0527<br>(0.165)    |
| Two bookcases     | 0.264<br>(0.275)                                   | -1.030<br>(0.748)        | 0.404<br>(0.398)                                    | -1.170<br>(0.835)                | 0.404<br>(0.398)                                      | -1.030<br>(0.748)        | -0.140<br>(0.162)         | 0.264<br>(0.275)                                     | -1.170<br>(0.835)   | 0.140<br>(0.162)     |
| Home possess H    | 0.647<br>(0.442)                                   | -4.835<br>(3.149)        | 0.992<br>(0.713)                                    | -5.180<br>(3.366)                | 0.992<br>(0.713)                                      | -4.835<br>(3.149)        | -0.345<br>(0.357)         | 0.647<br>(0.442)                                     | -5.180<br>(3.366)   | 0.345<br>(0.357)     |
| Home possess M    | -0.272<br>(0.200)                                  | -7.033*<br>(3.713)       | -0.716*<br>(0.423)                                  | -6.589*<br>(3.498)               | -0.716*<br>(0.423)                                    | -7.033*<br>(3.713)       | 0.444<br>(0.340)          | -0.272<br>(0.200)                                    | -6.589*<br>(3.498)  | -0.444<br>(0.340)    |
| TL spoken Als     | -0.200<br>(0.188)                                  | 0.0264<br>(0.635)        | -0.205<br>(0.172)                                   | 0.0310<br>(0.751)                | -0.205<br>(0.172)                                     | 0.0264<br>(0.635)        | 0.00462<br>(0.116)        | -0.200<br>(0.188)                                    | 0.0310<br>(0.751)   | -0.00462<br>(0.116)  |
| PC at H&SCL       | -0.290<br>(0.184)                                  | -0.0193<br>(0.394)       | -0.283*<br>(0.167)                                  | -0.0258<br>(0.524)               | -0.283*<br>(0.167)                                    | -0.0193<br>(0.394)       | -0.00650<br>(0.133)       | -0.290<br>(0.184)                                    | -0.0258<br>(0.524)  | 0.00650<br>(0.133)   |
| PC at H/SCL       | -0.283<br>(0.216)                                  | -0.978<br>(2.266)        | -0.233<br>(0.222)                                   | -1.028<br>(2.383)                | -0.233<br>(0.222)                                     | -0.978<br>(2.266)        | -0.0496<br>(0.117)        | -0.283<br>(0.216)                                    | -1.028<br>(2.383)   | 0.0496<br>(0.117)    |
| Male teacher      | 0.00279<br>(0.0855)                                | 0.506<br>(3.211)         | 0.00327<br>(0.113)                                  | 0.505<br>(3.215)                 | 0.00327<br>(0.113)                                    | 0.506<br>(3.211)         | -0.000478<br>(0.0287)     | 0.00279<br>(0.0855)                                  | 0.505<br>(3.215)    | 0.000478<br>(0.0287) |
| T. Experience     | -0.172<br>(0.189)                                  | 0.413<br>(3.068)         | -0.159<br>(0.214)                                   | 0.400<br>(2.967)                 | -0.159<br>(0.214)                                     | 0.413<br>(3.068)         | -0.0130<br>(0.109)        | -0.172<br>(0.189)                                    | 0.400<br>(2.967)    | 0.0130<br>(0.109)    |
| T. Certificate!   | -0.00881<br>(0.0469)                               | -2.106<br>(4.658)        | -0.0271<br>(0.0435)                                 | -2.088<br>(4.627)                | -0.0271<br>(0.0435)                                   | -2.106<br>(4.658)        | 0.0183<br>(0.0538)        | -0.00881<br>(0.0469)                                 | -2.088<br>(4.627)   | -0.0183<br>(0.0538)  |
| M SCL RCS         | -0.00634<br>(0.0340)                               | -0.229<br>(5.393)        | -0.00529<br>(0.0338)                                | -0.230<br>(5.417)                | -0.00529<br>(0.0338)                                  | -0.229<br>(5.393)        | -0.00105<br>(0.0272)      | -0.00634<br>(0.0340)                                 | -0.230<br>(5.417)   | 0.00105<br>(0.0272)  |
| L SCL RSC         | 0.0532<br>(0.0990)                                 | -0.958<br>(1.816)        | -1.20e-05<br>(0.102)                                | -0.905<br>(1.716)                | -1.20e-05<br>(0.102)                                  | -0.958<br>(1.816)        | 0.0532<br>(0.110)         | 0.0532<br>(0.0990)                                   | -0.905<br>(1.716)   | -0.0532<br>(0.110)   |
| T. UNI Degree     | 0.0363<br>(0.109)                                  | -2.456<br>(14.03)        | 0.0219<br>(0.0489)                                  | -2.442<br>(13.95)                | 0.0219<br>(0.0489)                                    | -2.456<br>(14.03)        | 0.0145<br>(0.108)         | 0.0363<br>(0.109)                                    | -2.442<br>(13.95)   | -0.0145<br>(0.108)   |
| COMMU.>5000       | 0.00634<br>(0.0535)                                | 0.156<br>(1.126)         | -0.00175<br>(0.0583)                                | 0.164<br>(1.188)                 | -0.00175<br>(0.0583)                                  | 0.156<br>(1.126)         | 0.00810<br>(0.0703)       | 0.00634<br>(0.0535)                                  | 0.164<br>(1.188)    | -0.00810<br>(0.0703) |
| Disadv            | -0.0586<br>(0.129)                                 | 0.193<br>(2.464)         | -0.0614<br>(0.133)                                  | 0.196<br>(2.502)                 | -0.0614<br>(0.133)                                    | 0.193<br>(2.464)         | 0.00281<br>(0.0395)       | -0.0586<br>(0.129)                                   | 0.196<br>(2.502)    | -0.00281<br>(0.0395) |
| Class size        | 0.875<br>(1.279)                                   | -41.35<br>(42.95)        | 0.635<br>(1.229)                                    | -41.11<br>(42.70)                | 0.635<br>(1.229)                                      | -41.35<br>(42.95)        | 0.240<br>(0.254)          | 0.875<br>(1.279)                                     | -41.11<br>(42.70)   | -0.240<br>(0.254)    |
| Class size sq     | -1.442<br>(1.283)                                  | 25.41<br>(26.39)         | -1.111<br>(1.202)                                   | 25.08<br>(26.04)                 | -1.111<br>(1.202)                                     | 25.41<br>(26.39)         | -0.331<br>(0.352)         | -1.442<br>(1.283)                                    | 25.08<br>(26.04)    | 0.331<br>(0.352)     |
| Constant          |  | 44.01*<br>(22.78)        |   | 44.01*<br>(22.78)                |   | 44.01*<br>(22.78)        |                           |  | 44.01*<br>(22.78)   |                      |
| Total (char/coef) | -1.789<br>(1.286)                                  | 22.77***<br>(2.034)      | -1.509<br>(1.344)                                   | 22.49***<br>(2.178)              | -1.509<br>(1.344)                                     | 22.77***<br>(2.034)      | -0.280<br>(0.721)         | -1.789<br>(1.286)                                    | 22.49***<br>(2.178) | 0.280<br>(0.721)     |
| Raw Gap           |  | Boys<br>431.3<br>(2.655) | Girls<br>410.4<br>(2.769)                           | Total Gap<br>20.98***<br>(2.408) |   | Boys<br>431.3<br>(2.655) | Girls<br>410.4<br>(2.769) | Total Gap<br>20.98***<br>(2.408)                     |                     |                      |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (only Tunisia have 2 classes chosen from each school)

Table A. 5: Turkey Mean decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                          | Two fold decomposition<br>Girls are reference group |                                | Three fold decomposition<br>Girls are reference group |                          |                           | Three fold decomposition<br>Boys are reference group |                    |                          |                           |                                |
|-------------------|--|--------------------------|---|--------------------------------|---|--------------------------|---------------------------|--|--------------------|--------------------------|---------------------------|--------------------------------|
|                   | Char.  | Coef.                    | Char.   | Coef.                          | Char.   | Coef.                    | Interactions              | Char.  | Coef.              | Interactions             |                           |                                |
| Lower-sec EDC     | -0.0552<br>(0.102)                                 | -5.618<br>(5.072)        | -0.212<br>(0.180)                                   | -5.461<br>(4.933)              | -0.212<br>(0.180)                                     | -5.618<br>(5.072)        | 0.157<br>(0.198)          | -0.0552<br>(0.102)                                   | -5.461<br>(4.933)  | -0.157<br>(0.198)        |                           |                                |
| Upper-sec         | -0.886*<br>(0.497)                                 | -0.156<br>(2.526)        | -0.907**<br>(0.450)                                 | -0.135<br>(2.180)              | -0.907**<br>(0.450)                                   | -0.156<br>(2.526)        | 0.0206<br>(0.347)         | -0.886*<br>(0.497)                                   | -0.135<br>(2.180)  | -0.0206<br>(0.347)       |                           |                                |
| Post-sec not UNI  | 0.0396<br>(0.246)                                  | -0.433<br>(0.595)        | 0.0523<br>(0.298)                                   | -0.446<br>(0.617)              | 0.0523<br>(0.298)                                     | -0.433<br>(0.595)        | -0.0126<br>(0.0615)       | 0.0396<br>(0.246)                                    | -0.446<br>(0.617)  | 0.0126<br>(0.0615)       |                           |                                |
| University degree | -0.360<br>(0.638)                                  | -0.556<br>(1.270)        | -0.392<br>(0.656)                                   | -0.524<br>(1.201)              | -0.392<br>(0.656)                                     | -0.556<br>(1.270)        | 0.0324<br>(0.0746)        | -0.360<br>(0.638)                                    | -0.524<br>(1.201)  | -0.0324<br>(0.0746)      |                           |                                |
| Native parents    | -0.538*<br>(0.291)                                 | 36.44*<br>(22.15)        | -0.187<br>(0.199)                                   | 36.09<br>(21.95)               | -0.187<br>(0.199)                                     | 36.44*<br>(22.15)        | -0.351<br>(0.283)         | -0.538*<br>(0.291)                                   | 36.09<br>(21.95)   | 0.351<br>(0.283)         |                           |                                |
| One bookcases     | -0.836**<br>(0.426)                                | 0.772<br>(1.762)         | -0.736**<br>(0.331)                                 | 0.672<br>(1.528)               | -0.736**<br>(0.331)                                   | 0.772<br>(1.762)         | -0.100<br>(0.246)         | -0.836**<br>(0.426)                                  | 0.672<br>(1.528)   | 0.100<br>(0.246)         |                           |                                |
| Two bookcases     | -1.911***<br>(0.451)                               | 3.214**<br>(1.520)       | -0.907**<br>(0.437)                                 | 2.210**<br>(1.087)             | -0.907**<br>(0.437)                                   | 3.214**<br>(1.520)       | -1.004**<br>(0.470)       | -1.911***<br>(0.451)                                 | 2.210**<br>(1.087) | 1.004**<br>(0.470)       |                           |                                |
| Home possess H    | 0.446<br>(0.517)                                   | -6.099<br>(4.096)        | 0.884<br>(0.830)                                    | -6.537<br>(4.432)              | 0.884<br>(0.830)                                      | -6.099<br>(4.096)        | -0.438<br>(0.441)         | 0.446<br>(0.517)                                     | -6.537<br>(4.432)  | -0.438<br>(0.441)        |                           |                                |
| Home possess M    | -0.468<br>(0.466)                                  | -3.592<br>(6.324)        | -0.670<br>(0.549)                                   | -3.390<br>(5.962)              | -0.670<br>(0.549)                                     | -3.592<br>(6.324)        | 0.202<br>(0.365)          | -0.468<br>(0.466)                                    | -3.390<br>(5.962)  | 0.202<br>(0.365)         |                           |                                |
| TL spoken Als     | -1.757***<br>(0.519)                               | -12.60*<br>(7.300)       | -2.971***<br>(0.773)                                | -11.39*<br>(6.553)             | -2.971***<br>(0.773)                                  | -12.60*<br>(7.300)       | 1.214<br>(0.790)          | -1.757***<br>(0.519)                                 | -11.39*<br>(6.553) | -1.214<br>(0.790)        |                           |                                |
| PC at H&SCL       | -0.00600<br>(0.409)                                | 0.204<br>(3.322)         | -0.00585<br>(0.500)                                 | 0.204<br>(3.340)               | -0.00585<br>(0.500)                                   | 0.204<br>(3.322)         | -0.000146<br>(0.0930)     | -0.00600<br>(0.409)                                  | 0.204<br>(3.340)   | 0.000146<br>(0.0930)     |                           |                                |
| PC at H/SCL       | -0.778*<br>(0.455)                                 | 0.0792<br>(6.574)        | -0.770<br>(0.623)                                   | 0.0719<br>(5.970)              | -0.770<br>(0.623)                                     | 0.0792<br>(6.574)        | -0.00738<br>(0.612)       | -0.778*<br>(0.455)                                   | 0.0719<br>(5.970)  | 0.00738<br>(0.612)       |                           |                                |
| Male teacher      | -0.137<br>(0.193)                                  | -2.356<br>(4.227)        | -0.217<br>(0.294)                                   | -2.276<br>(4.069)              | -0.217<br>(0.294)                                     | -2.356<br>(4.227)        | 0.0807<br>(0.182)         | -0.137<br>(0.193)                                    | -2.276<br>(4.069)  | -0.0807<br>(0.182)       |                           |                                |
| T. Experience     | -0.153<br>(0.286)                                  | -2.814<br>(7.976)        | -0.222<br>(0.366)                                   | -2.745<br>(7.772)              | -0.222<br>(0.366)                                     | -2.814<br>(7.976)        | 0.0690<br>(0.206)         | -0.153<br>(0.286)                                    | -2.745<br>(7.772)  | -0.0690<br>(0.206)       |                           |                                |
| T. Certificate!   | -0.0216<br>(0.0218)                                | -17.18<br>(26.56)        | -0.0422<br>(0.0473)                                 | -17.16<br>(26.53)              | -0.0422<br>(0.0473)                                   | -17.18<br>(26.56)        | 0.0206<br>(0.0322)        | -0.0216<br>(0.0218)                                  | -17.16<br>(26.53)  | -0.0206<br>(0.0322)      |                           |                                |
| M SCL RCS         | 0.0225<br>(0.374)                                  | -1.908<br>(9.797)        | 0.0201<br>(0.368)                                   | -1.905<br>(9.769)              | 0.0201<br>(0.368)                                     | -1.908<br>(9.797)        | 0.00237<br>(0.0360)       | 0.0225<br>(0.374)                                    | -1.905<br>(9.769)  | -0.00237<br>(0.0360)     |                           |                                |
| L SCL RSC         | -0.230<br>(0.468)                                  | 0.0990<br>(3.680)        | -0.233<br>(0.475)                                   | 0.102<br>(3.773)               | -0.233<br>(0.475)                                     | 0.0990<br>(3.680)        | 0.00273<br>(0.0962)       | -0.230<br>(0.468)                                    | 0.102<br>(3.773)   | -0.00273<br>(0.0962)     |                           |                                |
| T. UNI Degree     | 0.0133<br>(0.316)                                  | -9.604<br>(10.91)        | 0.325<br>(0.512)                                    | -9.915<br>(11.26)              | 0.325<br>(0.512)                                      | -9.604<br>(10.91)        | -0.312<br>(0.373)         | 0.0133<br>(0.316)                                    | -9.915<br>(11.26)  | 0.312<br>(0.373)         |                           |                                |
| COMMU.>5000       | -0.00838<br>(0.375)                                | 5.253<br>(5.352)         | -0.00509<br>(0.236)                                 | 5.250<br>(5.353)               | -0.00509<br>(0.236)                                   | 5.253<br>(5.352)         | -0.00330<br>(0.140)       | -0.00838<br>(0.375)                                  | 5.250<br>(5.353)   | 0.00330<br>(0.140)       |                           |                                |
| Disadv            | -0.897*<br>(0.478)                                 | 0.149<br>(5.610)         | -0.904*<br>(0.487)                                  | 0.156<br>(5.860)               | -0.904*<br>(0.487)                                    | 0.149<br>(5.610)         | 0.00658<br>(0.252)        | -0.897*<br>(0.478)                                   | 0.156<br>(5.860)   | -0.00658<br>(0.252)      |                           |                                |
| Class size        | 0.295<br>(0.667)                                   | -47.86<br>(50.67)        | -0.223<br>(0.714)                                   | -47.34<br>(50.00)              | -0.223<br>(0.714)                                     | -47.86<br>(50.67)        | 0.519<br>(0.952)          | 0.295<br>(0.667)                                     | -47.34<br>(50.00)  | -0.519<br>(0.952)        |                           |                                |
| Class size sq     | -0.189<br>(0.551)                                  | 27.37<br>(23.65)         | 0.376<br>(0.688)                                    | 26.81<br>(23.01)               | 0.376<br>(0.688)                                      | 27.37<br>(23.65)         | -0.565<br>(0.887)         | -0.189<br>(0.551)                                    | 26.81<br>(23.01)   | 0.565<br>(0.887)         |                           |                                |
| Constant          |  | 48.26<br>(46.50)         |   | 48.26<br>(46.50)               |   | 48.26<br>(46.50)         |                           |  | 48.26<br>(46.50)   |                          |                           |                                |
| Total (char/coef) | -8.694***<br>(1.985)                               | 8.151**<br>(3.638)       | -8.573***<br>(2.269)                                | 8.030**<br>(3.613)             | -8.573***<br>(2.269)                                  | 8.151**<br>(3.638)       | -0.121<br>(1.470)         | -8.694***<br>(1.985)                                 | 8.030**<br>(3.613) | 0.121<br>(1.470)         |                           |                                |
| Raw Gap           |  | Boys<br>431.6<br>(4.995) | Girls<br>432.1<br>(5.288)                           | Total Gap<br>-0.543<br>(3.888) |   | Boys<br>431.6<br>(4.995) | Girls<br>432.1<br>(5.288) | Total Gap<br>-0.543<br>(3.888)                       |                    | Boys<br>431.6<br>(4.995) | Girls<br>432.1<br>(5.288) | Total Gap<br>-0.543<br>(3.888) |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A.6: Iran Mean Decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                           | Two fold decomposition<br>Girls are reference group |                   | Three fold decomposition<br>Girls are reference group |                           |                                | Three fold decomposition<br>Boys are reference group |                   |                    |
|-------------------|--|---------------------------|---|-------------------|---|---------------------------|--------------------------------|--|-------------------|--------------------|
|                   | Char.  | Coef.                     | Char.   | Coef.             | Char.   | Coef.                     | Interactions                   | Char.  | Coef.             | Interactions       |
| Lower-sec EDC     | 0.0151<br>(0.0952)                                 | -1.872<br>(2.430)         | -0.0391<br>(0.138)                                  | -1.818<br>(2.373) | -0.0391<br>(0.138)                                    | -1.872<br>(2.430)         | 0.0541<br>(0.216)              | 0.0151<br>(0.0952)                                   | -1.818<br>(2.373) | -0.0541<br>(0.216) |
| Upper-sec         | -0.707*<br>(0.402)                                 | 1.538<br>(1.884)          | -0.387<br>(0.394)                                   | 1.217<br>(1.506)  | -0.387<br>(0.394)                                     | 1.538<br>(1.884)          | -0.321<br>(0.386)              | -0.707*<br>(0.402)                                   | 1.217<br>(1.506)  | 0.321<br>(0.386)   |
| Post-sec not UNI  | 0.310<br>(0.370)                                   | 0.491<br>(1.279)          | 0.222<br>(0.381)                                    | 0.578<br>(1.490)  | 0.222<br>(0.381)                                      | 0.491<br>(1.279)          | 0.0876<br>(0.219)              | 0.310<br>(0.370)                                     | 0.578<br>(1.490)  | -0.0876<br>(0.219) |
| University degree | -0.216<br>(0.560)                                  | 0.191<br>(1.477)          | -0.204<br>(0.712)                                   | 0.179<br>(1.352)  | -0.204<br>(0.712)                                     | 0.191<br>(1.477)          | -0.0119<br>(0.178)             | -0.216<br>(0.560)                                    | 0.179<br>(1.352)  | 0.0119<br>(0.178)  |
| Native parents    | -0.421<br>(0.287)                                  | 31.20*<br>(17.49)         | -0.00535<br>(0.230)                                 | 30.78*<br>(17.30) | -0.00535<br>(0.230)                                   | 31.20*<br>(17.49)         | -0.416<br>(0.323)              | -0.421<br>(0.287)                                    | 30.78*<br>(17.30) | 0.416<br>(0.323)   |
| One bookcases     | 0.0856<br>(0.514)                                  | 0.436<br>(1.335)          | 0.0750<br>(0.402)                                   | 0.446<br>(1.375)  | 0.0750<br>(0.402)                                     | 0.436<br>(1.335)          | 0.0106<br>(0.119)              | 0.0856<br>(0.514)                                    | 0.446<br>(1.375)  | -0.0106<br>(0.119) |
| Two bookcases     | -0.100<br>(0.284)                                  | -1.639<br>(1.454)         | -0.428<br>(0.316)                                   | -1.312<br>(1.184) | -0.428<br>(0.316)                                     | -1.639<br>(1.454)         | 0.328<br>(0.343)               | -0.100<br>(0.284)                                    | -1.312<br>(1.184) | -0.328<br>(0.343)  |
| Home possess H    | 0.0855<br>(0.845)                                  | 4.102<br>(3.440)          | 0.0138<br>(0.0519)                                  | 4.174<br>(3.576)  | 0.0138<br>(0.0519)                                    | 4.102<br>(3.440)          | 0.0717<br>(0.842)              | 0.0855<br>(0.845)                                    | 4.174<br>(3.576)  | -0.0717<br>(0.842) |
| Home possess M    | -0.406<br>(0.468)                                  | 4.652<br>(2.981)          | -0.0991<br>(0.213)                                  | 4.345<br>(2.803)  | -0.0991<br>(0.213)                                    | 4.652<br>(2.981)          | -0.307<br>(0.373)              | -0.406<br>(0.468)                                    | 4.345<br>(2.803)  | 0.307<br>(0.373)   |
| TL spoken Als     | -1.160<br>(1.088)                                  | -2.786<br>(5.776)         | -1.619*<br>(0.920)                                  | -2.327<br>(4.816) | -1.619*<br>(0.920)                                    | -2.786<br>(5.776)         | 0.459<br>(0.963)               | -1.160<br>(1.088)                                    | -2.327<br>(4.816) | -0.459<br>(0.963)  |
| PC at H&SCL       | -0.595<br>(1.320)                                  | -0.571<br>(1.704)         | -0.718<br>(1.389)                                   | -0.448<br>(1.552) | -0.718<br>(1.389)                                     | -0.571<br>(1.704)         | 0.123<br>(0.283)               | -0.595<br>(1.320)                                    | -0.448<br>(1.552) | -0.123<br>(0.283)  |
| PC at H/SCL       | 0.169<br>(0.409)                                   | -2.486<br>(2.770)         | 0.312<br>(0.695)                                    | -2.629<br>(2.922) | 0.312<br>(0.695)                                      | -2.486<br>(2.770)         | -0.143<br>(0.334)              | 0.169<br>(0.409)                                     | -2.629<br>(2.922) | 0.143<br>(0.334)   |
| Male teacher      | 5.929<br>(41.69)                                   | 4.009<br>(5.962)          | -22.03**<br>(10.76)                                 | 31.96<br>(49.40)  | -22.03**<br>(10.76)                                   | 4.009<br>(5.962)          | 27.95<br>(43.52)               | 5.929<br>(41.69)                                     | 31.96<br>(49.40)  | -27.95<br>(43.52)  |
| T. Experience     | 0.226<br>(0.765)                                   | -8.838<br>(10.30)         | 1.268<br>(1.468)                                    | -9.881<br>(11.41) | 1.268<br>(1.468)                                      | -8.838<br>(10.30)         | -1.043<br>(1.573)              | 0.226<br>(0.765)                                     | -9.881<br>(11.41) | 1.043<br>(1.573)   |
| M SCL RCS         | -0.423<br>(1.907)                                  | -13.39<br>(12.19)         | -0.112<br>(0.464)                                   | -13.70<br>(12.43) | -0.112<br>(0.464)                                     | -13.39<br>(12.19)         | -0.311<br>(1.536)              | -0.423<br>(1.907)                                    | -13.70<br>(12.43) | 0.311<br>(1.536)   |
| L SCL RSC         | 0.0639<br>(2.232)                                  | -5.684<br>(3.816)         | 0.0125<br>(0.283)                                   | -5.632<br>(3.709) | 0.0125<br>(0.283)                                     | -5.684<br>(3.816)         | 0.0514<br>(1.962)              | 0.0639<br>(2.232)                                    | -5.632<br>(3.709) | -0.0514<br>(1.962) |
| T. UNI Degree     | -0.489<br>(0.806)                                  | 2.073<br>(5.609)          | -0.157<br>(0.540)                                   | 1.741<br>(4.684)  | -0.157<br>(0.540)                                     | 2.073<br>(5.609)          | -0.333<br>(0.947)              | -0.489<br>(0.806)                                    | 1.741<br>(4.684)  | 0.333<br>(0.947)   |
| COMMU.>50000      | 0.165<br>(1.055)                                   | -1.953<br>(6.884)         | 0.210<br>(0.983)                                    | -1.998<br>(7.021) | 0.210<br>(0.983)                                      | -1.953<br>(6.884)         | -0.0450<br>(0.205)             | 0.165<br>(1.055)                                     | -1.998<br>(7.021) | 0.0450<br>(0.205)  |
| Disadv            | -1.472<br>(1.399)                                  | -3.726<br>(4.871)         | -0.388<br>(0.920)                                   | -4.810<br>(6.313) | -0.388<br>(0.920)                                     | -3.726<br>(4.871)         | -1.084<br>(1.556)              | -1.472<br>(1.399)                                    | -4.810<br>(6.313) | 1.084<br>(1.556)   |
| Class size        | 3.607<br>(5.263)                                   | 202.1*<br>(118.6)         | -6.568<br>(6.730)                                   | 212.3*<br>(125.4) | -6.568<br>(6.730)                                     | 202.1*<br>(118.6)         | 10.17<br>(10.00)               | 3.607<br>(5.263)                                     | 212.3*<br>(125.4) | -10.17<br>(10.00)  |
| Class size sq     | -2.269<br>(4.031)                                  | -100.6<br>(63.05)         | 5.304<br>(6.899)                                    | -108.2<br>(68.01) | 5.304<br>(6.899)                                      | -100.6<br>(63.05)         | -7.573<br>(9.057)              | -2.269<br>(4.031)                                    | -108.2<br>(68.01) | 7.573<br>(9.057)   |
| Constant          | -115.5<br>(75.74)                                  |                           | -115.5<br>(75.74)                                   |                   | -115.5<br>(75.74)                                     |                           | -115.5<br>(75.74)              |  |                   | -115.5<br>(75.74)  |
| Total (char/coef) | -0.394<br>(41.53)                                  | -6.592<br>(42.14)         | -24.43*<br>(12.96)                                  | 17.44<br>(11.66)  | -24.43*<br>(12.96)                                    | -6.592<br>(42.14)         | 24.04<br>(43.56)               | -0.394<br>(41.53)                                    | 17.44<br>(11.66)  | -24.04<br>(43.56)  |
| Raw Gap           | Boys<br>400.2<br>(6.090)                           | Girls<br>407.2<br>(5.295) | Total Gap<br>-6.987<br>(8.059)                      |                   | Boys<br>400.2<br>(6.090)                              | Girls<br>407.2<br>(5.295) | Total Gap<br>-6.987<br>(8.059) |  |                   |                    |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (teaching certificate (licence) not included for Iran)



Table A. 7 Jordan Mean Decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                              | Two fold decomposition<br>Girls are reference group |                     | Three fold decomposition<br>Girls are reference group |                             |                              | Three fold decomposition<br>Boys are reference group |                     |                    |
|-------------------|--|------------------------------|---|---------------------|---|-----------------------------|------------------------------|--|---------------------|--------------------|
|                   | Char.  | Coef.                        | Char.   | Coef.               | Char.   | Coef.                       | Interactions                 | Char.  | Coef.               | Interactions       |
| Lower-sec EDC     | 0.0258<br>(0.178)                                  | 0.555<br>(1.229)             | 0.116<br>(0.200)                                    | 0.465<br>(1.029)    | 0.116<br>(0.200)                                      | 0.555<br>(1.229)            | -0.0904<br>(0.214)           | 0.0258<br>(0.178)                                    | 0.465<br>(1.029)    | 0.0904<br>(0.214)  |
| Upper-sec         | -0.908*<br>(0.547)                                 | 3.171<br>(3.708)             | -0.307<br>(0.511)                                   | 2.570<br>(3.020)    | -0.307<br>(0.511)                                     | 3.171<br>(3.708)            | -0.601<br>(0.708)            | -0.908*<br>(0.547)                                   | 2.570<br>(3.020)    | 0.601<br>(0.708)   |
| Post-sec not UNI  | -1.630*<br>(0.867)                                 | 2.009<br>(2.966)             | -1.250*<br>(0.646)                                  | 1.629<br>(2.381)    | -1.250*<br>(0.646)                                    | 2.009<br>(2.966)            | -0.380<br>(0.597)            | -1.630*<br>(0.867)                                   | 1.629<br>(2.381)    | 0.380<br>(0.597)   |
| University degree | 1.979**<br>(0.860)                                 | 1.027<br>(3.245)             | 1.763**<br>(0.833)                                  | 1.243<br>(3.911)    | 1.763**<br>(0.833)                                    | 1.027<br>(3.245)            | 0.216<br>(0.670)             | 1.979**<br>(0.860)                                   | 1.243<br>(3.911)    | -0.216<br>(0.670)  |
| Native parents    | 0.216<br>(0.283)                                   | -9.463**<br>(4.635)          | -0.0571<br>(0.191)                                  | -9.189**<br>(4.450) | -0.0571<br>(0.191)                                    | -9.463**<br>(4.635)         | 0.273<br>(0.443)             | 0.216<br>(0.283)                                     | -9.189**<br>(4.450) | -0.273<br>(0.443)  |
| One bookcases     | -0.642**<br>(0.313)                                | 3.831<br>(2.443)             | -0.240<br>(0.202)                                   | 3.428<br>(2.241)    | -0.240<br>(0.202)                                     | 3.831<br>(2.443)            | -0.403<br>(0.313)            | -0.642**<br>(0.313)                                  | 3.428<br>(2.241)    | 0.403<br>(0.313)   |
| Two bookcases     | 0.0728<br>(0.336)                                  | 1.492<br>(1.767)             | 0.0471<br>(0.243)                                   | 1.518<br>(1.785)    | 0.0471<br>(0.243)                                     | 1.492<br>(1.767)            | 0.0257<br>(0.103)            | 0.0728<br>(0.336)                                    | 1.518<br>(1.785)    | -0.0257<br>(0.103) |
| Home possess H    | 0.170<br>(1.898)                                   | -2.450<br>(6.560)            | 0.185<br>(2.057)                                    | -2.466<br>(6.565)   | 0.185<br>(2.057)                                      | -2.450<br>(6.560)           | -0.0157<br>(0.178)           | 0.170<br>(1.898)                                     | -2.466<br>(6.565)   | 0.0157<br>(0.178)  |
| Home possess M    | -2.279*<br>(1.215)                                 | -1.649<br>(5.566)            | -2.461**<br>(1.196)                                 | -1.466<br>(5.008)   | -2.461**<br>(1.196)                                   | -1.649<br>(5.566)           | 0.183<br>(0.586)             | -2.279*<br>(1.215)                                   | -1.466<br>(5.008)   | -0.183<br>(0.586)  |
| TL spoken Als     | -0.677<br>(0.559)                                  | -6.743<br>(7.285)            | -0.302<br>(0.345)                                   | -7.118<br>(7.597)   | -0.302<br>(0.345)                                     | -6.743<br>(7.285)           | -0.374<br>(0.429)            | -0.677<br>(0.559)                                    | -7.118<br>(7.597)   | 0.374<br>(0.429)   |
| PC at H&SCL       | -0.0827<br>(0.267)                                 | 0.462<br>(6.383)             | -0.0604<br>(0.214)                                  | 0.439<br>(6.078)    | -0.0604<br>(0.214)                                    | 0.462<br>(6.383)            | -0.0223<br>(0.309)           | -0.0827<br>(0.267)                                   | 0.439<br>(6.078)    | -0.0223<br>(0.309) |
| PC at H/SCL       | -0.0797<br>(0.806)                                 | -2.477<br>(4.902)            | -0.0575<br>(0.569)                                  | -2.500<br>(4.951)   | -0.0575<br>(0.569)                                    | -2.477<br>(4.902)           | -0.0222<br>(0.245)           | -0.0797<br>(0.806)                                   | -2.500<br>(4.951)   | -0.0222<br>(0.245) |
| Male teacher      | 16.49<br>(21.18)                                   | 0.795**<br>(0.405)           | -27.92<br>(21.77)                                   | 45.20*<br>(24.54)   | -27.92<br>(21.77)                                     | 0.795**<br>(0.405)          | 44.41*<br>(24.18)            | 16.49<br>(21.18)                                     | 45.20*<br>(24.54)   | -44.41*<br>(24.18) |
| T. Experience     | -0.0630<br>(0.652)                                 | -13.27<br>(9.792)            | 0.217<br>(1.552)                                    | -13.55<br>(10.26)   | 0.217<br>(1.552)                                      | -13.27<br>(9.792)           | -0.280<br>(2.166)            | -0.0630<br>(0.652)                                   | -13.55<br>(10.26)   | 0.280<br>(2.166)   |
| T. Certificate!   | 0.00101<br>(0.793)                                 | 0.314<br>(14.08)             | -0.0156<br>(0.436)                                  | 0.331<br>(14.91)    | -0.0156<br>(0.436)                                    | 0.314<br>(14.08)            | 0.0166<br>(0.880)            | 0.00101<br>(0.793)                                   | 0.331<br>(14.91)    | -0.0166<br>(0.880) |
| M SCL RCS         | 0.124<br>(1.369)                                   | -18.57<br>(14.51)            | -0.0268<br>(0.330)                                  | -18.42<br>(14.07)   | -0.0268<br>(0.330)                                    | -18.57<br>(14.51)           | 0.151<br>(1.591)             | 0.124<br>(1.369)                                     | -18.42<br>(14.07)   | -0.151<br>(1.591)  |
| L SCL RSC         | -0.0213<br>(1.437)                                 | -6.194**<br>(2.915)          | 0.0208<br>(1.390)                                   | -6.236**<br>(3.168) | 0.0208<br>(1.390)                                     | -6.194**<br>(2.915)         | -0.0421<br>(2.816)           | -0.0213<br>(1.437)                                   | -6.236**<br>(3.168) | 0.0421<br>(2.816)  |
| T. UNI Degree     | -1.356<br>(1.552)                                  | 40.25<br>(30.99)             | 0.676<br>(1.721)                                    | 38.22<br>(29.35)    | 0.676<br>(1.721)                                      | 40.25<br>(30.99)            | -2.032<br>(2.736)            | -1.356<br>(1.552)                                    | 38.22<br>(29.35)    | 2.032<br>(2.736)   |
| COMMU.>50000      | 1.705<br>(1.728)                                   | -3.824<br>(7.098)            | 2.430<br>(2.298)                                    | -4.549<br>(8.320)   | 2.430<br>(2.298)                                      | -3.824<br>(7.098)           | -0.725<br>(1.501)            | 1.705<br>(1.728)                                     | -4.549<br>(8.320)   | 0.725<br>(1.501)   |
| Disadv            | 1.426<br>(1.828)                                   | 0.277<br>(7.964)             | 1.483<br>(1.619)                                    | 0.220<br>(6.360)    | 1.483<br>(1.619)                                      | 0.277<br>(7.964)            | -0.0574<br>(1.617)           | 1.426<br>(1.828)                                     | 0.220<br>(6.360)    | 0.0574<br>(1.617)  |
| Class size        | 0.770<br>(3.678)                                   | 53.95<br>(169.1)             | 2.573<br>(4.701)                                    | 52.14<br>(163.9)    | 2.573<br>(4.701)                                      | 53.95<br>(169.1)            | -1.803<br>(6.156)            | 0.770<br>(3.678)                                     | 52.14<br>(163.9)    | 1.803<br>(6.156)   |
| Class size sq     | 1.635<br>(4.686)                                   | -54.63<br>(84.37)            | -2.038<br>(3.927)                                   | -50.96<br>(78.90)   | -2.038<br>(3.927)                                     | -54.63<br>(84.37)           | -3.672<br>(7.096)            | 1.635<br>(4.686)                                     | -50.96<br>(78.90)   | 3.672<br>(7.096)   |
| Constant          | 48.26<br>(46.50)                                   | 48.26<br>(46.50)             | 48.26<br>(46.50)                                    | 48.26<br>(46.50)    | 48.26<br>(46.50)                                      | 48.26<br>(46.50)            | 48.26<br>(46.50)             | 48.26<br>(46.50)                                     | 48.26<br>(46.50)    | 48.26<br>(46.50)   |
| Total (char/coef) | 11.91<br>(23.46)                                   | -32.38<br>(23.79)            | -28.92<br>(21.79)                                   | 8.455<br>(20.41)    | -28.92<br>(21.79)                                     | -32.38<br>(23.79)           | 40.83*<br>(23.57)            | 11.91<br>(23.46)                                     | 8.455<br>(20.41)    | -40.83*<br>(23.57) |
| Raw Gap           | Boys<br>417.1***<br>(5.626)                        | Girls<br>437.6***<br>(6.420) | Total Gap<br>-20.47**<br>(8.832)                    |                     |   | Boys<br>417.1***<br>(5.626) | Girls<br>437.6***<br>(6.420) | Total Gap<br>-20.47**<br>(8.832)                     |                     |                    |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A. 8: Saudi Arabia Mean Decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                              | Two fold decomposition<br>Girls are reference group |                     | Three fold decomposition<br>Girls are reference group |                             |                              | Three fold decomposition<br>Boys are reference group |                     |                    |
|-------------------|--|------------------------------|---|---------------------|---|-----------------------------|------------------------------|--|---------------------|--------------------|
|                   | Char.  | Coef.                        | Char.   | Coef.               | Char.   | Coef.                       | Interactions                 | Char.  | Coef.               | Interactions       |
| Lower-sec EDC     | 0.168<br>(0.206)                                   | -3.361**<br>(1.690)          | -0.151<br>(0.157)                                   | -3.042**<br>(1.546) | -0.151<br>(0.157)                                     | -3.361**<br>(1.690)         | 0.319<br>(0.322)             | 0.168<br>(0.206)                                     | -3.042**<br>(1.546) | -0.319<br>(0.322)  |
| Upper-sec         | 0.197<br>(0.204)                                   | -3.019<br>(2.012)            | -0.126<br>(0.191)                                   | -2.697<br>(1.776)   | -0.126<br>(0.191)                                     | -3.019<br>(2.012)           | 0.323<br>(0.347)             | 0.197<br>(0.204)                                     | -2.697<br>(1.776)   | -0.323<br>(0.347)  |
| Post-sec not UNI  | -0.177<br>(0.176)                                  | 0.227<br>(0.731)             | -0.133<br>(0.184)                                   | 0.183<br>(0.583)    | -0.133<br>(0.184)                                     | 0.227<br>(0.731)            | -0.0440<br>(0.151)           | -0.177<br>(0.176)                                    | 0.183<br>(0.583)    | 0.0440<br>(0.151)  |
| University degree | -0.111<br>(0.275)                                  | -4.538<br>(3.321)            | -0.279<br>(0.506)                                   | -4.370<br>(3.228)   | -0.279<br>(0.506)                                     | -4.538<br>(3.321)           | 0.168<br>(0.266)             | -0.111<br>(0.275)                                    | -4.370<br>(3.228)   | -0.168<br>(0.266)  |
| Native parents    | 0.552<br>(0.392)                                   | -0.385<br>(6.746)            | 0.527<br>(0.364)                                    | -0.360<br>(6.321)   | 0.527<br>(0.364)                                      | -0.385<br>(6.746)           | 0.0252<br>(0.449)            | 0.552<br>(0.392)                                     | -0.360<br>(6.321)   | -0.0252<br>(0.449) |
| One bookcases     | -1.802**<br>(0.818)                                | 3.074<br>(2.894)             | -0.833<br>(0.640)                                   | 2.105<br>(1.988)    | -0.833<br>(0.640)                                     | 3.074<br>(2.894)            | -0.969<br>(0.931)            | -1.802**<br>(0.818)                                  | 2.105<br>(1.988)    | 0.969<br>(0.931)   |
| Two bookcases     | -0.405<br>(0.433)                                  | -0.380<br>(1.815)            | -0.515<br>(0.338)                                   | -0.270<br>(1.277)   | -0.515<br>(0.338)                                     | -0.380<br>(1.815)           | 0.111<br>(0.539)             | -0.405<br>(0.433)                                    | -0.270<br>(1.277)   | 0.111<br>(0.539)   |
| Home possess H    | -6.764***<br>(1.649)                               | 12.00*<br>(6.303)            | -3.954***<br>(1.408)                                | 9.189*<br>(4.903)   | -3.954***<br>(1.408)                                  | 12.00*<br>(6.303)           | -2.810*<br>(1.605)           | -6.764***<br>(1.649)                                 | 9.189*<br>(4.903)   | 2.810*<br>(1.605)  |
| Home possess M    | 0.455<br>(0.639)                                   | 7.009<br>(5.096)             | 0.184<br>(0.261)                                    | 7.280<br>(5.305)    | 0.184<br>(0.261)                                      | 7.009<br>(5.096)            | 0.270<br>(0.459)             | 0.455<br>(0.639)                                     | 7.280<br>(5.305)    | -0.270<br>(0.459)  |
| TL spoken Als     | -0.787<br>(0.743)                                  | -1.788<br>(4.000)            | -0.374<br>(0.505)                                   | -2.202<br>(4.893)   | -0.374<br>(0.505)                                     | -1.788<br>(4.000)           | -0.413<br>(0.743)            | -0.787<br>(0.743)                                    | -2.202<br>(4.893)   | 0.413<br>(0.926)   |
| PC at H&SCL       | -3.132**<br>(1.403)                                | -0.637<br>(1.030)            | -1.967<br>(1.648)                                   | -1.802<br>(2.940)   | -1.967<br>(1.648)                                     | -0.637<br>(1.030)           | -1.165<br>(1.403)            | -3.132**<br>(1.403)                                  | -1.802<br>(2.940)   | 1.165<br>(1.930)   |
| PC at H/SCL       | 2.064**<br>(0.924)                                 | -2.693<br>(4.779)            | 1.492**<br>(0.695)                                  | -2.121<br>(3.742)   | 1.492**<br>(0.695)                                    | -2.693<br>(4.779)           | 0.573<br>(1.054)             | 2.064**<br>(0.924)                                   | -2.121<br>(3.742)   | -0.573<br>(1.054)  |
| Male teacher      | 14.71<br>(14.05)                                   | 0.124<br>(0.0781)            | -39.66<br>(24.93)                                   | 54.49*<br>(30.31)   | -39.66<br>(24.93)                                     | 0.124<br>(0.0781)           | 54.36*<br>(30.24)            | 14.71<br>(14.05)                                     | 54.49*<br>(30.31)   | -54.36*<br>(30.24) |
| T. Experience     | 0.0451<br>(1.013)                                  | -7.401<br>(6.804)            | 2.219<br>(2.697)                                    | -9.575<br>(9.129)   | 2.219<br>(2.697)                                      | -7.401<br>(6.804)           | -2.174<br>(2.881)            | 0.0451<br>(1.013)                                    | -9.575<br>(9.129)   | 2.174<br>(2.881)   |
| M SCL RCS         | -0.0642<br>(0.452)                                 | 25.53*<br>(13.34)            | 1.133<br>(2.862)                                    | 24.34*<br>(12.52)   | 1.133<br>(2.862)                                      | 25.53*<br>(13.34)           | -1.197<br>(3.019)            | -0.0642<br>(0.452)                                   | 24.34*<br>(12.52)   | 1.197<br>(3.019)   |
| L SCL RSC         | 0.784<br>(1.521)                                   | 3.198<br>(4.059)             | 2.004<br>(2.031)                                    | 1.978<br>(2.536)    | 2.004<br>(2.031)                                      | 3.198<br>(4.059)            | -1.220<br>(1.990)            | 0.784<br>(1.521)                                     | 1.978<br>(2.536)    | 1.220<br>(1.990)   |
| T. UNI Degree     | -0.206<br>(0.884)                                  | 12.58<br>(24.92)             | -0.608<br>(1.217)                                   | 12.98<br>(25.97)    | -0.608<br>(1.217)                                     | 12.58<br>(24.92)            | 0.402<br>(1.486)             | -0.206<br>(0.884)                                    | 12.98<br>(25.97)    | -0.402<br>(1.486)  |
| COMMU.>50000      | -0.392<br>(1.368)                                  | 0.193<br>(4.407)             | -0.381<br>(1.050)                                   | 0.182<br>(4.123)    | -0.381<br>(1.050)                                     | 0.193<br>(4.407)            | -0.0109<br>(0.436)           | -0.392<br>(1.368)                                    | 0.182<br>(4.123)    | 0.0109<br>(0.436)  |
| Disadv            | 0.271<br>(0.832)                                   | -2.156<br>(2.209)            | 0.00708<br>(0.106)                                  | -1.891<br>(1.977)   | 0.00708<br>(0.106)                                    | -2.156<br>(2.209)           | 0.264<br>(0.824)             | 0.271<br>(0.832)                                     | -1.891<br>(1.977)   | -0.264<br>(0.824)  |
| Class size        | -1.127<br>(3.096)                                  | 45.12<br>(48.51)             | 0.887<br>(1.385)                                    | 43.11<br>(46.18)    | 0.887<br>(1.385)                                      | 45.12<br>(48.51)            | -2.014<br>(3.910)            | -1.127<br>(3.096)                                    | 43.11<br>(46.18)    | 2.014<br>(3.910)   |
| Class size sq     | 5.873<br>(7.615)                                   | -28.35<br>(26.66)            | -1.969<br>(2.715)                                   | -20.51<br>(19.15)   | -1.969<br>(2.715)                                     | -28.35<br>(26.66)           | 7.842<br>(8.226)             | 5.873<br>(7.615)                                     | -20.51<br>(19.15)   | -7.842<br>(8.226)  |
| Constant          |  | -94.56**<br>(40.45)          |   | -94.56**<br>(40.45) |   | -94.56**<br>(40.45)         |                              |  | -94.56**<br>(40.45) |                    |
| Total (char/coef) | 11.86<br>(14.36)                                   | -34.69**<br>(14.66)          | -43.88*<br>(25.02)                                  | 21.05<br>(25.59)    | -43.88*<br>(25.02)                                    | -34.69**<br>(14.66)         | 55.74*<br>(30.69)            | 11.86<br>(14.36)                                     | 21.05<br>(25.59)    | 21.05<br>(25.59)   |
| Raw Gap           | Boys<br>318.5***<br>(3.981)                        | Girls<br>341.4***<br>(3.614) | Total Gap<br>-22.83***<br>(5.008)                   |                     |   | Boys<br>318.5***<br>(3.981) | Girls<br>341.4***<br>(3.614) | Total Gap<br>-22.83***<br>(5.008)                    |                     |                    |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (teaching certificate (licence) not included for Saudi Arabia)

Table A. 9: Egypt Mean Decomposition

| VARIABLES         | Two fold decomposition<br>Boys are reference group |                           | Two fold decomposition<br>Girls are reference group |                     | Three fold decomposition<br>Girls are reference group |                           |                                  | Three fold decomposition<br>Boys are reference group |                     |                     |
|-------------------|--|---------------------------|---|---------------------|---|---------------------------|----------------------------------|--|---------------------|---------------------|
|                   | Char.  | Coef.                     | Char.   | Coef.               | Char.   | Coef.                     | Interactions                     | Char.  | Coef.               | Interactions        |
| Lower-sec EDC     | -0.319<br>(0.308)                                  | 1.008<br>(3.220)          | -0.204<br>(0.258)                                   | 0.892<br>(2.863)    | -0.204<br>(0.258)                                     | 1.008<br>(3.220)          | -0.116<br>(0.387)                | -0.319<br>(0.308)                                    | 0.892<br>(2.863)    | 0.116<br>(0.387)    |
| Upper-sec         | -0.653<br>(0.447)                                  | 2.609<br>(1.835)          | -0.294<br>(0.219)                                   | 2.251<br>(1.591)    | -0.294<br>(0.219)                                     | 2.609<br>(1.835)          | -0.358<br>(0.379)                | -0.653<br>(0.447)                                    | 2.251<br>(1.591)    | 0.358<br>(0.379)    |
| Post-sec not UNI  | 0.0173<br>(0.736)                                  | 1.042<br>(2.166)          | 0.0147<br>(0.479)                                   | 1.045<br>(2.201)    | 0.0147<br>(0.479)                                     | 1.042<br>(2.166)          | 0.00266<br>(0.258)               | 0.0173<br>(0.736)                                    | 1.045<br>(2.201)    | -0.00266<br>(0.258) |
| University degree | 0.236<br>(0.287)                                   | 0.897<br>(1.712)          | 0.0172<br>(0.332)                                   | 1.115<br>(2.136)    | 0.0172<br>(0.332)                                     | 0.897<br>(1.712)          | 0.218<br>(0.452)                 | 0.236<br>(0.287)                                     | 1.115<br>(2.136)    | -0.218<br>(0.452)   |
| Native parents    | -1.745<br>(1.604)                                  | 15.01**<br>(6.785)        | -1.162<br>(1.013)                                   | 14.42**<br>(6.502)  | -1.162<br>(1.013)                                     | 15.01**<br>(6.785)        | -0.584<br>(0.671)                | -1.745<br>(1.604)                                    | 14.42**<br>(6.502)  | 0.584<br>(0.671)    |
| One bookcases     | -0.323<br>(0.204)                                  | 2.214<br>(1.951)          | -0.122<br>(0.142)                                   | 2.012<br>(1.769)    | -0.122<br>(0.142)                                     | 2.214<br>(1.951)          | -0.202<br>(0.188)                | -0.323<br>(0.204)                                    | 2.012<br>(1.769)    | 0.202<br>(0.188)    |
| Two bookcases     | 0.0228<br>(0.0582)                                 | 0.510<br>(1.126)          | -0.0105<br>(0.0624)                                 | 0.544<br>(1.204)    | -0.0105<br>(0.0624)                                   | 0.510<br>(1.126)          | 0.0333<br>(0.0849)               | 0.0228<br>(0.0582)                                   | 0.544<br>(1.204)    | -0.0333<br>(0.0849) |
| Home possess H    | 0.658<br>(1.615)                                   | -2.694<br>(2.468)         | 0.787<br>(1.939)                                    | -2.824<br>(2.558)   | 0.787<br>(1.939)                                      | -2.694<br>(2.468)         | -0.130<br>(0.347)                | 0.658<br>(1.615)                                     | -2.824<br>(2.558)   | 0.130<br>(0.347)    |
| Home possess M    | -1.104<br>(0.788)                                  | -6.111<br>(4.390)         | -1.504<br>(1.010)                                   | -5.710<br>(4.152)   | -1.504<br>(1.010)                                     | -6.111<br>(4.390)         | 0.401<br>(0.364)                 | -1.104<br>(0.788)                                    | -5.710<br>(4.152)   | -0.401<br>(0.364)   |
| TL spoken Als     | -0.443<br>(0.404)                                  | 10.45**<br>(4.575)        | -1.021<br>(0.738)                                   | 11.03**<br>(4.808)  | -1.021<br>(0.738)                                     | 10.45**<br>(4.575)        | 0.578<br>(0.444)                 | -0.443<br>(0.404)                                    | 11.03**<br>(4.808)  | -0.578<br>(0.444)   |
| PC at H&SCL       | -1.382**<br>(0.627)                                | 0.275<br>(2.216)          | -1.461**<br>(0.614)                                 | 0.354<br>(2.819)    | -1.461**<br>(0.614)                                   | 0.275<br>(2.216)          | 0.0794<br>(0.613)                | -1.382**<br>(0.627)                                  | 0.354<br>(2.819)    | -0.0794<br>(0.613)  |
| PC at H/SCL       | 2.503***<br>(0.788)                                | 0.396<br>(5.741)          | 2.571***<br>(0.835)                                 | 0.328<br>(4.765)    | 2.571***<br>(0.835)                                   | 0.396<br>(5.741)          | -0.0674<br>(0.979)               | 2.503***<br>(0.788)                                  | 0.328<br>(4.765)    | 0.0674<br>(0.979)   |
| Male teacher      | 0.890<br>(1.525)                                   | 4.835<br>(6.424)          | -0.174<br>(1.134)                                   | 5.899<br>(7.865)    | -0.174<br>(1.134)                                     | 4.835<br>(6.424)          | 1.065<br>(1.481)                 | 0.890<br>(1.525)                                     | 5.899<br>(7.865)    | -1.065<br>(1.481)   |
| T. Experience     | -0.652<br>(1.124)                                  | 2.184<br>(8.418)          | -0.546<br>(1.048)                                   | 2.078<br>(8.027)    | -0.546<br>(1.048)                                     | 2.184<br>(8.418)          | -0.106<br>(0.401)                | -0.652<br>(1.124)                                    | 2.078<br>(8.027)    | 0.106<br>(0.401)    |
| T. Certificate    | 0.0710<br>(0.379)                                  | 4.954<br>(7.664)          | 0.0185<br>(0.158)                                   | 5.006<br>(7.766)    | 0.0185<br>(0.158)                                     | 4.954<br>(7.664)          | 0.0525<br>(0.279)                | 0.0710<br>(0.379)                                    | 5.006<br>(7.766)    | -0.0525<br>(0.279)  |
| M SCL RCS         | 0.394<br>(0.808)                                   | -13.64*<br>(7.704)        | -0.224<br>(0.568)                                   | -13.02*<br>(7.213)  | -0.224<br>(0.568)                                     | -13.64*<br>(7.704)        | 0.618<br>(1.283)                 | 0.394<br>(0.808)                                     | -13.02*<br>(7.213)  | -0.618<br>(1.283)   |
| L SCL RSC         | -0.0625<br>(0.529)                                 | 0.862<br>(1.130)          | -0.139<br>(0.939)                                   | 0.939<br>(1.430)    | -0.139<br>(0.939)                                     | 0.862<br>(1.130)          | 0.0766<br>(0.494)                | -0.0625<br>(0.529)                                   | 0.939<br>(1.430)    | -0.0766<br>(0.494)  |
| T. UNI Degree     | 3.279<br>(20.79)                                   | 22.87<br>(191.6)          | 0.798<br>(1.742)                                    | 25.35<br>(212.3)    | 0.798<br>(1.742)                                      | 22.87<br>(191.6)          | 2.482<br>(20.78)                 | 3.279<br>(20.79)                                     | 25.35<br>(212.3)    | -2.482<br>(20.78)   |
| COMMU.>50000      | 0.758<br>(0.817)                                   | 0.729<br>(4.289)          | 0.646<br>(0.755)                                    | 0.842<br>(4.973)    | 0.646<br>(0.755)                                      | 0.729<br>(4.289)          | 0.112<br>(0.687)                 | 0.758<br>(0.817)                                     | 0.842<br>(4.973)    | -0.112<br>(0.687)   |
| Disadv.           | 0.0456<br>(0.272)                                  | 10.18<br>(6.347)          | 0.637<br>(1.493)                                    | 9.590<br>(6.049)    | 0.637<br>(1.493)                                      | 10.18<br>(6.347)          | -0.592<br>(1.342)                | 0.0456<br>(0.272)                                    | 9.590<br>(6.049)    | 0.592<br>(1.342)    |
| Class size        | -0.259<br>(2.715)                                  | 65.30<br>(153.4)          | 1.999<br>(4.880)                                    | 63.04<br>(148.0)    | 1.999<br>(4.880)                                      | 65.30<br>(153.4)          | -2.258<br>(5.383)                | -0.259<br>(2.715)                                    | 63.04<br>(148.0)    | 2.258<br>(5.383)    |
| Class size sq     | 1.279<br>(2.979)                                   | -47.12<br>(85.69)         | -1.522<br>(4.263)                                   | -44.32<br>(80.57)   | -1.522<br>(4.263)                                     | -47.12<br>(85.69)         | 2.800<br>(5.299)                 | 1.279<br>(2.979)                                     | -44.32<br>(80.57)   | -2.800<br>(5.299)   |
| Constant          | -100.4<br>(234.0)                                  | -100.4<br>(234.0)         | -100.4<br>(234.0)                                   | -100.4<br>(234.0)   | -100.4<br>(234.0)                                     | -100.4<br>(234.0)         | -100.4<br>(234.0)                | -100.4<br>(234.0)                                    | -100.4<br>(234.0)   | -100.4<br>(234.0)   |
| Total (char/coef) | -0.403<br>(12.55)                                  | -12.87<br>(14.49)         | -1.920<br>(3.927)                                   | -11.35**<br>(5.581) | -1.920<br>(3.927)                                     | -12.87<br>(14.49)         | 1.517<br>(12.16)                 | -0.403<br>(12.55)                                    | -11.35**<br>(5.581) | -1.517<br>(12.16)   |
| Raw Gap           | Boys<br>384.0<br>(4.587)                           | Girls<br>397.3<br>(4.995) | Total Gap<br>-13.27**<br>(6.445)                    |                     | Boys<br>384.0<br>(4.587)                              | Girls<br>397.3<br>(4.995) | Total Gap<br>-13.27**<br>(6.445) |  |                     |                     |

Jackknife Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix B: Quantile Decompositions

**Table B. 1: Algeria detailed decomposition of maths test scores by gender (boys as reference)**

| VARIABLES                  | Without reweighting<br>Boys are reference group  |   |  |  | F(x) for Boys Reweighted to Girls                 |   |  |   | Without reweighting<br>Boys are reference group     |                                  |                                   |                                  | F(x) for Boys Reweighted to Girls |             |           |             |               |  |  |  |  |  |  |  |
|----------------------------|--|---|--|--|---|---|--|---|---|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-------------|-----------|-------------|---------------|--|--|--|--|--|--|--|
|                            | 10th quantile                                    |   |  |  |   |   |  |   | 50th quantile                                       |                                  |                                   |                                  |                                   |             |           |             | 90th quantile |  |  |  |  |  |  |  |
|                            | Explained  | Unexplained                                       | Explained  | Unexplained                                      | Explained   | Unexplained   | Explained  | Unexplained                                       | Explained   | Unexplained                      | Explained                         | Unexplained                      | Explained                         | Unexplained | Explained | Unexplained |               |  |  |  |  |  |  |  |
| Lower-sec EDC              | 0.00236<br>(0.104)                               | 0.989<br>(3.053)                                  | -0.000343<br>(0.0123)                                | 0.696<br>(2.931)                                 | 0.00626<br>(0.0615)                               | -1.107<br>(1.866)                                     | -0.000909<br>(0.00722)                           | -1.467<br>(1.871)                                 | 0.00762<br>(0.148)                                  | -0.994<br>(2.140)                | -0.00111<br>(0.0178)              | -0.931<br>(2.219)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Upper-sec                  | -0.251<br>(0.267)                                | 1.761<br>(2.473)                                  | -0.256<br>(0.273)                                    | 1.514<br>(2.682)                                 | -0.117<br>(0.235)                                 | -0.0496<br>(2.402)                                    | -0.119<br>(2.34)                                 | -0.395<br>(2.361)                                 | -0.144<br>(0.342)                                   | -0.123<br>(2.604)                | -0.147<br>(0.339)                 | -0.244<br>(2.448)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Post-sec not UNI           | -0.151<br>(0.224)                                | 0.667<br>(1.937)                                  | -0.154<br>(0.227)                                    | 0.573<br>(1.834)                                 | -0.0630<br>(0.139)                                | -0.623<br>(1.184)                                     | -0.0641<br>(0.140)                               | -0.661<br>(1.173)                                 | -0.246<br>(0.279)                                   | 0.262<br>(1.835)                 | -0.250<br>(0.256)                 | 0.429<br>(1.750)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| University degree          | 0.0432<br>(0.245)                                | 0.934<br>(1.823)                                  | 0.0450<br>(0.241)                                    | 0.608<br>(1.825)                                 | 0.0716<br>(0.113)                                 | 0.731<br>(1.125)                                      | 0.0746<br>(0.114)                                | 0.603<br>(1.140)                                  | 0.0944<br>(0.191)                                   | 0.373<br>(1.759)                 | 0.0983<br>(0.200)                 | 0.345<br>(1.818)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| One bookcases              | -0.464<br>(0.348)                                | 0.398<br>(1.803)                                  | -0.454<br>(0.306)                                    | 0.358<br>(1.757)                                 | -0.711**<br>(0.330)                               | 1.236<br>(1.261)                                      | -0.696***<br>(0.265)                             | 1.168<br>(1.312)                                  | -1.185***<br>(0.566)                                | 2.937<br>(2.465)                 | -1.159***<br>(0.443)              | 2.754<br>(2.689)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Two bookcases              | 0.00147<br>(0.117)                               | 0.197<br>(1.133)                                  | 0.00140<br>(0.0874)                                  | 0.17<br>(1.131)                                  | -0.0173<br>(0.0582)                               | -0.182<br>(0.760)                                     | -0.0165<br>(0.525)                               | -0.317<br>(0.775)                                 | -0.0774<br>(0.0920)                                 | -0.102<br>(0.996)                | -0.0740<br>(0.0714)               | 0.0618<br>(0.991)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess H             | 0.0527<br>(0.216)                                | -0.985<br>(4.476)                                 | 0.0917<br>(0.0618)                                   | -0.73<br>(4.572)                                 | 0.0566<br>(0.193)                                 | -1.456<br>(2.773)                                     | 0.0984**<br>(0.0491)                             | -1.814<br>(2.944)                                 | 0.0223<br>(0.108)                                   | -3.941<br>(3.088)                | 0.0387<br>(0.0634)                | -3.701<br>(3.315)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess M             | -0.377<br>(0.262)                                | 3.962<br>(5.660)                                  | -0.428*<br>(0.219)                                   | 4.433<br>(5.598)                                 | -0.362<br>(0.258)                                 | 0.564<br>(4.013)                                      | -0.410**<br>(0.171)                              | 0.455<br>(4.041)                                  | -0.385<br>(0.311)                                   | 1.737<br>(4.538)                 | -0.437**<br>(0.208)               | 1.361<br>(4.635)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| TL spoken ALs              | 0.0883<br>(0.151)                                | 0.731<br>(3.282)                                  | 0.0880<br>(0.153)                                    | 0.541<br>(3.231)                                 | 0.0184<br>(0.136)                                 | -0.0427<br>(2.444)                                    | 0.0183<br>(0.129)                                | -0.129<br>(2.402)                                 | -0.143<br>(0.158)                                   | -2.692<br>(2.582)                | -0.143<br>(0.135)                 | -3.068<br>(2.753)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H&SCL                | -0.285<br>(0.273)                                | 0.654<br>(0.715)                                  | -0.276<br>(0.237)                                    | 0.588<br>(0.789)                                 | -0.205<br>(0.170)                                 | 0.512<br>(0.575)                                      | -0.199<br>(0.154)                                | 0.566<br>(0.583)                                  | -0.169<br>(0.271)                                   | 0.0739<br>(0.890)                | -0.164<br>(0.260)                 | -0.0393<br>(0.900)               |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H/SCL                | -0.0217<br>(0.101)                               | 0.894<br>(2.658)                                  | -0.0348<br>(0.0469)                                  | 1.362<br>(2.839)                                 | -0.0183<br>(0.0766)                               | -0.0294<br>(1.934)                                    | -0.0294<br>(0.0347)                              | -0.0614<br>(2.076)                                | 0.0139<br>(0.0309)                                  | 2.597<br>(2.873)                 | 0.0223<br>(0.0300)                | 2.916<br>(2.544)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Male teacher               | 0.0829<br>(0.173)                                | 0.0601<br>(4.054)                                 | 0.0718<br>(0.136)                                    | -0.0413<br>(4.165)                               | 0.0685<br>(0.131)                                 | -0.558<br>(3.554)                                     | 0.0593<br>(0.114)                                | -0.498<br>(3.895)                                 | 0.142<br>(0.163)                                    | -0.231<br>(4.756)                | 0.123<br>(0.141)                  | -0.209<br>(4.667)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Experience              | -0.00896<br>(0.0464)                             | 4.613<br>(9.983)                                  | -0.0124<br>(0.0308)                                  | 4.666<br>(9.657)                                 | -0.0158<br>(0.175)                                | -3.592<br>(5.387)                                     | -0.0219<br>(0.0504)                              | -3.199<br>(5.310)                                 | -0.0101<br>(0.0432)                                 | 3.859<br>(6.885)                 | -0.0140<br>(0.0306)               | 4.493<br>(7.369)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Certificate!            | 0.00712<br>(0.0530)                              | -3.738<br>(5.570)                                 | 0.00801<br>(0.0412)                                  | -3.385<br>(5.852)                                | -0.000230<br>(0.0287)                             | -3.650<br>(3.539)                                     | -0.000259<br>(0.0306)                            | -3.304<br>(3.631)                                 | 0.00435<br>(0.0687)                                 | -4.788<br>(4.455)                | 0.00489<br>(0.0427)               | -4.676<br>(5.287)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| M SCL RCS                  | 0.0117<br>(0.0795)                               | -0.465<br>(13.03)                                 | 0.0123<br>(0.0845)                                   | -1.603<br>(13.74)                                | 0.0239<br>(0.0572)                                | -1.883<br>(5.683)                                     | 0.0251<br>(0.0560)                               | -1.339<br>(5.578)                                 | 0.0714<br>(0.101)                                   | -4.904<br>(9.082)                | 0.0750<br>(0.106)                 | -3.37<br>(7.501)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| L SCL RSC                  | -0.0190<br>(0.0698)                              | 0.330<br>(1.695)                                  | -0.00945<br>(0.0313)                                 | 0.229<br>(1.683)                                 | -0.0194<br>(0.0472)                               | 0.547<br>(1.099)                                      | -0.00966<br>(0.0258)                             | 0.705<br>(1.116)                                  | 0.00419<br>(0.0488)                                 | 0.881<br>(1.431)                 | 0.00208<br>(0.0279)               | 0.94<br>(1.351)                  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. UNI Degree              | -0.0138<br>(0.0932)                              | 0.952<br>(1.419)                                  | -0.0122<br>(0.0608)                                  | 1.051<br>(1.662)                                 | -0.0135<br>(0.0668)                               | 0.398<br>(1.005)                                      | -0.0120<br>(0.0441)                              | 0.452<br>(1.013)                                  | 0.0227<br>(0.140)                                   | 0.431<br>(1.594)                 | 0.0201<br>(0.0764)                | 0.595<br>(1.639)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| COMMU.>50000               | 0.0473<br>(0.0883)                               | -3.920<br>(3.805)                                 | 0.0403<br>(0.0690)                                   | -3.641<br>(3.440)                                | 0.0189<br>(0.0551)                                | -2.021<br>(2.250)                                     | 0.0161<br>(0.0462)                               | -1.822<br>(2.305)                                 | -0.0387<br>(0.0823)                                 | -1.633<br>(3.453)                | -0.0330<br>(0.0635)               | -1.509<br>(3.572)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Pov 50% Disadv             | 0.00161<br>(0.0590)                              | -3.466<br>(3.893)                                 | 0.00188<br>(0.0645)                                  | -3.718<br>(3.968)                                | -0.0143<br>(0.0455)                               | 0.738<br>(2.947)                                      | -0.0166<br>(0.0518)                              | 0.721<br>(3.004)                                  | -0.00847<br>(0.0770)                                | 1.141<br>(3.507)                 | -0.00988<br>(0.0639)              | 0.676<br>(3.477)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size                 | 0.689<br>(1.185)                                 | -25.96<br>(76.10)                                 | 0.707<br>(0.960)                                     | -34.35<br>(75.29)                                | 0.501<br>(0.879)                                  | -38.89<br>(62.48)                                     | 0.514<br>(0.714)                                 | -46.07<br>(65.39)                                 | 0.524<br>(0.827)                                    | -42.75<br>(61.10)                | 0.537<br>(0.876)                  | -49.09<br>(61.67)                |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size sq              | -0.181<br>(0.636)                                | 11.80<br>(46.79)                                  | -0.185<br>(0.458)                                    | 16.46<br>(46.13)                                 | -0.0717<br>(0.368)                                | 24.77<br>(37.72)                                      | -0.0732<br>(0.333)                               | 29.27<br>(38.06)                                  | -0.173<br>(0.413)                                   | 18.39<br>(39.61)                 | -0.177<br>(0.462)                 | 21.4<br>(39.83)                  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Constant                   | 19.08<br>(47.58)                                 | 24.48<br>(50.01)                                  | 24.48<br>(50.01)                                     | 24.48<br>(50.01)                                 | 36.65<br>(34.31)                                  | 39.05<br>(37.34)                                      | 39.05<br>(37.34)                                 | 39.05<br>(37.34)                                  | 40.74<br>(29.48)                                    | 42.16<br>(29.12)                 | 42.16<br>(29.12)                  | 42.16<br>(29.12)                 |                                   |             |           |             |               |  |  |  |  |  |  |  |
| <b>Total (Expl/Unexpl)</b> | <b>-1.552**</b><br><b>(0.748)</b>                | <b>8.089***</b><br><b>(3.136)</b>                 | <b>-1.325**</b><br><b>(0.597)</b>                    | <b>8.087**</b><br><b>(3.193)</b>                 | <b>-1.736***</b><br><b>(0.656)</b>                | <b>8.389***</b><br><b>(2.333)</b>                     | <b>-1.395***</b><br><b>(0.503)</b>               | <b>8.178***</b><br><b>(2.278)</b>                 | <b>-2.209*</b><br><b>(1.165)</b>                    | <b>7.021**</b><br><b>(3.091)</b> | <b>-2.156**</b><br><b>(0.997)</b> | <b>7.033**</b><br><b>(3.104)</b> |                                   |             |           |             |               |  |  |  |  |  |  |  |
| <b>Raw Gap</b>             | <b>Boys</b><br><b>314.0***</b><br><b>(3.323)</b> | <b>Girls</b><br><b>307.5***</b><br><b>(3.221)</b> | <b>Total Gap</b><br><b>6.537**</b><br><b>(3.156)</b> | <b>Boys</b><br><b>389.6***</b><br><b>(2.628)</b> | <b>Girls</b><br><b>382.9***</b><br><b>(2.819)</b> | <b>Total Gap</b><br><b>6.653***</b><br><b>(2.396)</b> | <b>Boys</b><br><b>466.7***</b><br><b>(2.454)</b> | <b>Girls</b><br><b>461.9***</b><br><b>(2.582)</b> | <b>Total Gap</b><br><b>4.812*</b><br><b>(2.849)</b> |                                  |                                   |                                  |                                   |             |           |             |               |  |  |  |  |  |  |  |

Jackknife Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (parents nationality not included in Algeria, Native parents) Dummy controls for missing observations included.

Table B. 2: Syria detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                              |                               |                             | F(x) for Boys Reweighted to Girls |                                  |                             |                              | Without reweighting<br>Boys are reference group |                    |                      |                   | F(x) for Boys Reweighted to Girls |             |  |  |
|---------------------|---|------------------------------|-------------------------------|-----------------------------|-----------------------------------|----------------------------------|-----------------------------|------------------------------|---|--------------------|----------------------|-------------------|-----------------------------------|-------------|--|--|
|                     | 10th quantile                                   |                              |                               |                             | 50th quantile                     |                                  |                             |                              | 90th quantile                                   |                    |                      |                   |                                   |             |  |  |
|                     | Explained                                       | Unexplained                  | Explained                     | Unexplained                 | Explained                         | Unexplained                      | Explained                   | Unexplained                  | Explained                                       | Unexplained        | Explained            | Unexplained       | Explained                         | Unexplained |  |  |
| Lower-sec EDC       | -0.0325<br>(0.260)                              | 1.887<br>(4.528)             | -0.0253<br>(0.165)            | 1.834<br>(4.890)            | -0.0544<br>(0.144)                | 0.836<br>(3.336)                 | -0.0423<br>(0.0942)         | -0.459<br>(3.588)            | -0.0878<br>(0.286)                              | 2.021<br>(4.064)   | -0.0682<br>(0.160)   | -1.542<br>(5.186) |                                   |             |  |  |
| Upper-sec           | -0.281<br>(0.444)                               | 3.810<br>(3.286)             | -0.383<br>(0.563)             | 4.427<br>(3.824)            | 0.185<br>(0.360)                  | 0.612<br>(2.954)                 | 0.252<br>(0.504)            | 0.383<br>(3.690)             | 0.258<br>(0.488)                                | 1.794<br>(3.353)   | 0.351<br>(0.657)     | -0.84<br>(4.362)  |                                   |             |  |  |
| Post-sec not UNI    | 0.452<br>(0.354)                                | 4.998<br>(4.261)             | 0.561<br>(0.355)              | 4.457<br>(4.595)            | 0.409<br>(0.346)                  | 1.633<br>(3.221)                 | 0.509*<br>(0.277)           | 1.885<br>(3.523)             | 0.485<br>(0.568)                                | 3.058<br>(3.548)   | 0.603<br>(0.419)     | 2.129<br>(4.514)  |                                   |             |  |  |
| University degree   | 0.00228<br>(0.185)                              | 0.924<br>(2.419)             | 0.128<br>(0.107)              | 1.31<br>(3.201)             | 0.00310<br>(0.381)                | -0.445<br>(1.962)                | 0.174<br>(0.144)            | -1.219<br>(2.041)            | 0.00334<br>(0.481)                              | 0.0460<br>(2.440)  | 0.188<br>(0.156)     | -0.249<br>(3.065) |                                   |             |  |  |
| Native parents      | -1.533**<br>(0.761)                             | 8.023<br>(14.37)             | -1.608**<br>(0.744)           | 8.956<br>(14.94)            | -1.218**<br>(0.593)               | 15.79*<br>(9.190)                | -1.278***<br>(0.441)        | 20.89*<br>(11.07)            | -0.637<br>(0.571)                               | 5.867<br>(10.97)   | -0.668<br>(0.572)    | 6.526<br>(13.90)  |                                   |             |  |  |
| One bookcases       | -0.0781<br>(0.107)                              | -0.825<br>(2.350)            | -0.0644<br>(0.0852)           | -0.565<br>(2.121)           | -0.0713<br>(0.109)                | -0.110<br>(2.139)                | -0.0587<br>(0.0804)         | -0.295<br>(2.332)            | -0.0533<br>(0.187)                              | -0.649<br>(3.323)  | -0.0439<br>(0.126)   | -0.671<br>(3.570) |                                   |             |  |  |
| Two bookcases       | 0.0383<br>(0.0637)                              | 0.455<br>(1.934)             | 0.0183<br>(0.0301)            | 0.877<br>(1.863)            | -0.0106<br>(0.0541)               | 0.339<br>(1.310)                 | -0.00507<br>(0.0281)        | 0.466<br>(1.731)             | -0.0914<br>(0.254)                              | 0.312<br>(2.323)   | -0.0436<br>(0.108)   | -1.372<br>(2.696) |                                   |             |  |  |
| Home possess H      | -2.072<br>(1.333)                               | 5.683<br>(6.072)             | -1.778**<br>(0.775)           | 2.854<br>(4.990)            | -2.068<br>(1.381)                 | 0.206<br>(5.491)                 | -1.774***<br>(0.679)        | -1.465<br>(5.926)            | -1.577<br>(1.304)                               | -0.0711<br>(7.412) | -1.353*<br>(0.733)   | -0.346<br>(8.278) |                                   |             |  |  |
| Home possess M      | 0.570<br>(0.600)                                | 6.680<br>(8.112)             | 0.463<br>(0.282)              | 1.548<br>(8.326)            | 0.491<br>(0.715)                  | 2.326<br>(6.771)                 | 0.398<br>(0.288)            | 0.508<br>(7.088)             | 0.291<br>(0.590)                                | -0.0271<br>(7.649) | 0.236<br>(0.222)     | 0.723<br>(9.309)  |                                   |             |  |  |
| TL spoken ALs       | 0.613<br>(0.644)                                | 6.104<br>(13.26)             | 0.337<br>(0.340)              | 2.676<br>(14.98)            | 0.0688<br>(0.320)                 | 3.480<br>(6.066)                 | 0.0378<br>(0.175)           | -1.753<br>(7.210)            | -0.0592<br>(0.479)                              | -0.724<br>(8.920)  | -0.0325<br>(0.263)   | -5.032<br>(11.88) |                                   |             |  |  |
| PC at H&SCL         | 0.310<br>(0.395)                                | -1.990<br>(6.021)            | 0.263<br>(0.235)              | -1.858<br>(7.341)           | 0.377<br>(0.436)                  | -2.594<br>(5.204)                | 0.321<br>(0.271)            | -0.944<br>(5.344)            | 0.158<br>(0.318)                                | -1.260<br>(5.854)  | 0.134<br>(0.236)     | -1.383<br>(6.276) |                                   |             |  |  |
| PC at H/SCL         | 1.214<br>(0.753)                                | -6.914<br>(6.854)            | 1.454**<br>(0.683)            | -5.715<br>(8.296)           | 1.214*<br>(0.632)                 | -7.163<br>(5.261)                | 1.453***<br>(0.528)         | -3.165<br>(5.750)            | 0.442<br>(0.650)                                | -1.636<br>(7.716)  | 0.529<br>(0.732)     | -1.172<br>(8.350) |                                   |             |  |  |
| Male teacher        | 0.303<br>(2.731)                                | 6.637<br>(5.790)             | 0.300<br>(2.717)              | 5.963<br>(5.793)            | 1.325<br>(2.322)                  | 5.257<br>(5.172)                 | 1.315<br>(2.309)            | 5.657<br>(5.279)             | 3.042<br>(2.358)                                | 4.998<br>(5.616)   | 3.020<br>(2.357)     | 5.935<br>(6.088)  |                                   |             |  |  |
| T. Experience       | 0.218<br>(1.015)                                | -12.97<br>(13.49)            | 0.107<br>(0.488)              | -9.876<br>(12.78)           | -0.100<br>(1.050)                 | -10.63<br>(13.16)                | -0.0494<br>(0.486)          | -6.198<br>(13.94)            | 0.356<br>(0.875)                                | -13.06<br>(10.80)  | 0.176<br>(0.421)     | -12.76<br>(11.29) |                                   |             |  |  |
| T. Certificate!     | 0.250<br>(1.005)                                | -1.723<br>(16.43)            | 0.540<br>(0.657)              | -3.721<br>(15.68)           | 0.299<br>(0.989)                  | -8.560<br>(14.64)                | 0.646<br>(0.627)            | -10.76<br>(15.23)            | 0.0410<br>(0.475)                               | -0.917<br>(15.24)  | 0.0886<br>(0.620)    | -2.054<br>(17.91) |                                   |             |  |  |
| M SCL RCS           | -0.0535<br>(0.547)                              | -6.710<br>(25.40)            | -0.0105<br>(0.361)            | -10.05<br>(23.97)           | 0.0294<br>(0.485)                 | -7.921<br>(23.01)                | 0.00577<br>(0.408)          | -11.12<br>(22.42)            | 0.00735<br>(0.389)                              | -21.58<br>(19.85)  | 0.00144<br>(0.230)   | -29.04<br>(20.33) |                                   |             |  |  |
| L SCL RSC           | -1.527<br>(2.844)                               | -1.000<br>(1.410)            | -1.467<br>(2.569)             | -1.756<br>(1.629)           | 0.970<br>(2.206)                  | -0.507<br>(0.994)                | 0.932<br>(2.008)            | -0.686<br>(1.026)            | 0.0552<br>(1.387)                               | -0.804<br>(0.944)  | 0.0530<br>(1.327)    | -1.058<br>(1.006) |                                   |             |  |  |
| T. UNI Degree       | 1.485<br>(1.360)                                | 3.883<br>(7.914)             | 1.526<br>(1.112)              | 1.506<br>(6.857)            | 0.911<br>(1.296)                  | 2.514<br>(5.429)                 | 0.936<br>(1.006)            | 0.902<br>(5.671)             | 1.581<br>(0.772)                                | 1.581<br>(6.390)   | 1.192<br>(0.764)     | -2.244<br>(7.148) |                                   |             |  |  |
| COMMU.>50000        | -0.843<br>(1.159)                               | 2.102<br>(8.543)             | -0.673<br>(0.867)             | 0.162<br>(8.299)            | 0.296<br>(0.599)                  | 1.607<br>(5.768)                 | 0.236<br>(0.483)            | -1.171<br>(6.390)            | 0.835<br>(1.246)                                | 3.952<br>(7.255)   | 0.666<br>(0.956)     | 0.508<br>(7.545)  |                                   |             |  |  |
| Pov 50% Disadv      | -3.405<br>(2.657)                               | -9.241<br>(7.310)            | -3.407*<br>(1.939)            | -7.052<br>(6.623)           | -4.224<br>(3.289)                 | -11.65*<br>(6.716)               | -4.226**<br>(1.831)         | -9.161<br>(6.786)            | -4.459<br>(3.265)                               | -9.608<br>(6.014)  | -4.461***<br>(1.731) | -9.886<br>(7.043) |                                   |             |  |  |
| Class size          | 5.118<br>(6.193)                                | -22.81<br>(207.9)            | 2.613<br>(3.295)              | 44.27<br>(207.0)            | 3.802<br>(3.880)                  | 55.96<br>(237.6)                 | 1.941<br>(2.028)            | 71.86<br>(243.4)             | 2.536<br>(3.599)                                | 134.9<br>(260.4)   | 1.295<br>(1.854)     | 112.2<br>(261.3)  |                                   |             |  |  |
| Class size sq       | -2.605<br>(4.981)                               | 10.14<br>(119.5)             | -0.520<br>(1.964)             | -39.58<br>(120.0)           | -2.018<br>(2.676)                 | -30.34<br>(133.6)                | -0.402<br>(0.733)           | -45.1<br>(137.5)             | -0.718<br>(3.014)                               | -92.89<br>(149.7)  | -0.143<br>(0.795)    | -87.84<br>(150.3) |                                   |             |  |  |
| Constant            | 16.05<br>(107.9)                                |                              | 13.50<br>(105.3)              |                             | 11.09<br>(128.1)                  |                                  | 14.11<br>(130.5)            |                              | 4.382<br>(129.7)                                |                    | 51.77<br>(130.1)     |                   |                                   |             |  |  |
| Total (Expl/Unexpl) | -5.365<br>(6.551)                               | 16.03*<br>(9.299)            | -2.894<br>(3.391)             | 13.58<br>(9.484)            | -2.476<br>(5.920)                 | 23.21***<br>(7.581)              | -0.00472<br>(3.261)         | 22.48***<br>(8.133)          | 2.483<br>(6.932)                                | 15.74*<br>(8.257)  | -0.800<br>(3.262)    | 15.39*<br>(9.324) |                                   |             |  |  |
| Raw Gap             | Boys<br>296.6***<br>(6.700)                     | Girls<br>285.9***<br>(6.494) | Total Gap<br>10.67<br>(7.993) | Boys<br>405.7***<br>(5.767) | Girls<br>385.0***<br>(4.977)      | Total Gap<br>20.73***<br>(6.812) | Boys<br>510.8***<br>(5.520) | Girls<br>492.6***<br>(5.169) | Total Gap<br>18.22***<br>(5.975)                |                    |                      |                   |                                   |             |  |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 3: Tunisia detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |  |  |                            | F(x) for Boys Reweighted to Girls         |  |  |                            | Without reweighting<br>Boys are reference group |  |  |                            | F(x) for Boys Reweighted to Girls |             |               |             |               |             |  |
|---------------------|---|--|--|----------------------------|---|--|--|----------------------------|---|--|--|----------------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|--|
|                     | 10th quantile                                   |  | 50th quantile                                  |                            | 90th quantile                             |  | 10th quantile                                  |                            | 50th quantile                                   |  | 90th quantile                                  |                            | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |  |
|                     | Explained                                       | Unexplained                                | Explained                                      | Unexplained                | Explained                                 | Unexplained                                | Explained                                      | Unexplained                | Explained                                       | Unexplained                                | Explained                                      | Unexplained                | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |  |
| Lower-sec EDC       | 0.137<br>(0.454)                                | 1.926<br>(4.722)                           | 0.142<br>(0.450)                               | 1.87<br>(4.907)            | 0.163<br>(0.317)                          | 1.779<br>(3.151)                           | 0.169<br>(0.234)                               | 2.212<br>(3.283)           | 0.438<br>(0.381)                                | 0.0804<br>(4.253)                          | 0.454<br>(0.299)                               | 0.468<br>(4.416)           |                                   |             |               |             |               |             |  |
| Upper-sec           | 0.0285<br>(0.187)                               | 1.274<br>(4.098)                           | 0.0303<br>(0.199)                              | 1.809<br>(3.909)           | -0.0159<br>(0.133)                        | 2.786<br>(3.705)                           | -0.0169<br>(0.119)                             | 3.166<br>(3.713)           | 0.0753<br>(0.181)                               | 3.398<br>(4.397)                           | 0.0801<br>(0.167)                              | 4.115<br>(4.601)           |                                   |             |               |             |               |             |  |
| Post-sec not UNI    | 0.00490<br>(0.0597)                             | -0.163<br>(3.351)                          | 0.00578<br>(0.0707)                            | 0.288<br>(3.194)           | -0.000391<br>(0.0567)                     | -0.861<br>(1.975)                          | -0.000461<br>(0.0427)                          | -0.63<br>(2.094)           | -0.0195<br>(0.155)                              | -1.348<br>(3.037)                          | -0.0230<br>(0.0541)                            | -0.828<br>(3.199)          |                                   |             |               |             |               |             |  |
| University degree   | 0.135<br>(0.349)                                | 0.394<br>(3.443)                           | 0.145<br>(0.353)                               | 0.322<br>(3.358)           | 0.109<br>(0.137)                          | -0.0676<br>(1.351)                         | 0.117<br>(0.133)                               | 0.0384<br>(1.481)          | 0.448<br>(0.407)                                | 0.315<br>(4.188)                           | 0.481<br>(0.312)                               | 0.513<br>(4.204)           |                                   |             |               |             |               |             |  |
| Native parents      | -1.001*<br>(0.566)                              | 17.89<br>(18.13)                           | -1.007***<br>(0.369)                           | 16.76<br>(18.39)           | -0.829**<br>(0.378)                       | 15.30<br>(10.51)                           | -0.834***<br>(0.215)                           | 15.15<br>(10.40)           | -0.546**<br>(0.241)                             | -2.035<br>(11.08)                          | -0.549***<br>(0.176)                           | -3.956<br>(11.08)          |                                   |             |               |             |               |             |  |
| One bookcases       | -0.240<br>(0.163)                               | 0.452<br>(1.987)                           | -0.248*<br>(0.150)                             | 0.5<br>(1.977)             | -0.438*<br>(0.259)                        | 0.604<br>(2.861)                           | -0.452**<br>(0.219)                            | 0.292<br>(2.647)           | -0.778<br>(0.481)                               | 0.292<br>(2.928)                           | -0.802***<br>(0.265)                           | 2.213<br>(2.913)           |                                   |             |               |             |               |             |  |
| Two bookcases       | 0.0261<br>(0.109)                               | -0.587<br>(0.804)                          | 0.0268<br>(0.113)                              | -0.374<br>(0.837)          | 0.258<br>(0.246)                          | -0.209<br>(1.067)                          | 0.265**<br>(0.127)                             | -0.107<br>(1.016)          | 0.547<br>(0.532)                                | -2.371<br>(1.669)                          | 0.562***<br>(0.182)                            | -2.239<br>(1.692)          |                                   |             |               |             |               |             |  |
| Home possess H      | 0.606<br>(0.509)                                | -4.665<br>(6.931)                          | 0.593*<br>(0.326)                              | -4.569<br>(6.776)          | 0.741<br>(0.565)                          | -4.524<br>(3.992)                          | 0.726***<br>(0.209)                            | -4.35<br>(4.158)           | 0.545<br>(0.472)                                | -4.533<br>(4.240)                          | 0.534**<br>(0.223)                             | -5.257<br>(4.459)          |                                   |             |               |             |               |             |  |
| Home possess M      | -0.172<br>(0.350)                               | -8.920<br>(8.198)                          | -0.167<br>(0.308)                              | -9.178<br>(8.987)          | -0.424<br>(0.271)                         | -6.661<br>(5.026)                          | -0.410**<br>(0.194)                            | -5.479<br>(5.152)          | -0.204<br>(0.235)                               | -5.455<br>(3.666)                          | -0.197<br>(0.180)                              | -6.001<br>(3.897)          |                                   |             |               |             |               |             |  |
| TL spoken ALs       | -0.222<br>(0.197)                               | -0.535<br>(1.163)                          | -0.228*<br>(0.132)                             | -0.369<br>(1.141)          | -0.167<br>(0.181)                         | 0.123<br>(0.937)                           | -0.171<br>(0.117)                              | 0.0248<br>(0.976)          | -0.268<br>(0.167)                               | -0.0314<br>(0.694)                         | -0.275***<br>(0.0987)                          | -0.0648<br>(0.713)         |                                   |             |               |             |               |             |  |
| PC at H&SCL         | -0.293<br>(0.215)                               | 0.217<br>(0.866)                           | -0.280<br>(0.200)                              | -0.0088<br>(0.876)         | -0.356<br>(0.229)                         | -0.257<br>(0.655)                          | -0.340***<br>(0.113)                           | -0.307<br>(0.650)          | -0.127<br>(0.129)                               | 0.310<br>(0.443)                           | -0.121<br>(0.0971)                             | 0.252<br>(0.429)           |                                   |             |               |             |               |             |  |
| PC at H/SCL         | -0.422<br>(0.299)                               | -1.197<br>(7.059)                          | -0.418**<br>(0.208)                            | -2.06<br>(6.532)           | -0.292<br>(0.259)                         | -1.953<br>(3.351)                          | -0.289**<br>(0.114)                            | -1.917<br>(3.358)          | -0.0944<br>(0.125)                              | 2.867<br>(3.229)                           | -0.0936<br>(0.104)                             | 2.553<br>(3.283)           |                                   |             |               |             |               |             |  |
| Male teacher        | 0.00285<br>(0.142)                              | 2.004<br>(4.871)                           | 0.00112<br>(0.0437)                            | 3.065<br>(4.705)           | 0.00370<br>(0.0855)                       | 1.074<br>(4.506)                           | 0.00145<br>(0.0267)                            | 1.434<br>(4.313)           | 0.000129<br>(0.0352)                            | 3.451<br>(5.841)                           | 5.09e-05<br>(0.0124)                           | 4.53<br>(5.841)            |                                   |             |               |             |               |             |  |
| T. Experience       | -0.0998<br>(0.217)                              | -1.872<br>(9.484)                          | -0.105<br>(0.221)                              | -2.545<br>(9.310)          | -0.172<br>(0.233)                         | -1.247<br>(3.777)                          | -0.181<br>(0.113)                              | -1.116<br>(3.820)          | -0.204<br>(0.360)                               | 4.540<br>(7.125)                           | -0.213<br>(0.205)                              | 4.73<br>(6.947)            |                                   |             |               |             |               |             |  |
| T. Certificate!     | -0.00521<br>(0.0910)                            | -5.228<br>(6.867)                          | -0.00597<br>(0.0708)                           | -3.74<br>(6.465)           | -0.0280<br>(0.0779)                       | 1.019<br>(6.465)                           | -0.0321<br>(0.0771)                            | 2.386<br>(10.21)           | 0.0380<br>(0.0785)                              | -2.525<br>(12.39)                          | 0.0435<br>(0.0987)                             | -1.784<br>(12.71)          |                                   |             |               |             |               |             |  |
| M SCL RCS           | 0.0160<br>(0.120)                               | 5.638<br>(8.403)                           | 0.0236<br>(0.0789)                             | 6.018<br>(7.203)           | -0.0100<br>(0.168)                        | -0.467<br>(11.28)                          | -0.0147<br>(0.0778)                            | 0.488<br>(11.61)           | 0.00792<br>(0.0752)                             | -0.976<br>(12.97)                          | 0.0117<br>(0.0590)                             | -0.0104<br>(13.33)         |                                   |             |               |             |               |             |  |
| L SCL RSC           | 0.0624<br>(0.211)                               | -0.0445<br>(3.523)                         | 0.0739<br>(0.242)                              | 0.336<br>(2.836)           | 0.0919<br>(0.175)                         | -1.668<br>(3.533)                          | 0.109<br>(0.166)                               | -1.365<br>(3.434)          | -0.125<br>(0.230)                               | 1.598<br>(4.211)                           | -0.148<br>(0.181)                              | 1.692<br>(4.219)           |                                   |             |               |             |               |             |  |
| T. UNI Degree       | -0.0157<br>(0.0776)                             | 19.27<br>(18.95)                           | -0.0161<br>(0.0722)                            | 17.63<br>(21.09)           | 0.0451<br>(0.147)                         | -3.018<br>(22.98)                          | 0.0461<br>(0.0856)                             | -3.176<br>(21.08)          | 0.0375<br>(0.180)                               | -16.10<br>(39.26)                          | 0.0383<br>(0.157)                              | -17.29<br>(38.47)          |                                   |             |               |             |               |             |  |
| COMMU.>50000        | 0.0195<br>(0.0693)                              | 0.276<br>(1.945)                           | 0.0229<br>(0.0810)                             | 0.89<br>(1.798)            | 2.40e-05<br>(0.0958)                      | -0.252<br>(1.606)                          | 2.81e-05<br>(0.0916)                           | 0.215<br>(1.487)           | 0.0284<br>(0.134)                               | 1.144<br>(2.655)                           | 0.0332<br>(0.141)                              | 0.797<br>(2.653)           |                                   |             |               |             |               |             |  |
| Pov 50% Disadv      | -0.0835<br>(0.0783)                             | -2.390<br>(5.243)                          | -0.0892<br>(0.0650)                            | -2.327<br>(5.095)          | -0.0964<br>(0.196)                        | -2.132<br>(4.415)                          | -0.103<br>(0.0761)                             | -1.191<br>(4.080)          | 0.00426<br>(0.0601)                             | 5.093<br>(5.551)                           | 0.00455<br>(0.0542)                            | 5.338<br>(5.470)           |                                   |             |               |             |               |             |  |
| Class size          | 0.944<br>(1.301)                                | -116.4**<br>(52.32)                        | 0.809<br>(0.635)                               | -125.1**<br>(51.27)        | 0.955<br>(1.456)                          | -52.43<br>(116.7)                          | 0.818<br>(0.632)                               | -63.21<br>(122.5)          | 0.842<br>(1.389)                                | 24.25<br>(89.93)                           | 0.721<br>(0.510)                               | 16.59<br>(87.50)           |                                   |             |               |             |               |             |  |
| Class size sq       | -1.471<br>(1.303)                               | 62.77*<br>(32.80)                          | -1.270*<br>(0.732)                             | 65.11**<br>(31.95)         | -1.559<br>(1.510)                         | 29.66<br>(65.31)                           | -1.346*<br>(0.754)                             | 37.3<br>(67.52)            | -1.384<br>(1.250)                               | -8.148<br>(47.97)                          | -1.195*<br>(0.643)                             | -1.387<br>(44.34)          |                                   |             |               |             |               |             |  |
| Constant            |   | -98.18<br>(63.97)                          |  | -233.2<br>(686.5)          |   | 49.21<br>(61.00)                           |  | 45.97<br>(62.47)           |   | 7.250<br>(72.07)                           |  | 8.491<br>(72.46)           |                                   |             |               |             |               |             |  |
| Total (Expl/Unexpl) | <b>-2.373**</b><br>(1.146)                      | <b>25.83***</b><br>(4.056)                 | <b>-2.150***</b><br>(0.634)                    | <b>26.31***</b><br>(4.095) | <b>-2.383*</b><br>(1.359)                 | <b>24.90***</b><br>(3.486)                 | <b>-1.820***</b><br>(0.657)                    | <b>25.02***</b><br>(3.399) | <b>-0.419</b><br>(1.853)                        | <b>15.80***</b><br>(4.291)                 | <b>-0.387</b><br>(0.790)                       | <b>15.90***</b><br>(4.242) |                                   |             |               |             |               |             |  |
| Raw Gap             | <b>Boys</b><br><b>349.5***</b><br>(4.498)       | <b>Girls</b><br><b>326.1***</b><br>(3.338) | <b>Total Gap</b><br><b>23.46***</b><br>(4.150) |                            | <b>Boys</b><br><b>429.7***</b><br>(3.169) | <b>Girls</b><br><b>407.1***</b><br>(3.189) | <b>Total Gap</b><br><b>22.52***</b><br>(3.833) |                            | <b>Boys</b><br><b>515.3***</b><br>(4.277)       | <b>Girls</b><br><b>499.9***</b><br>(3.814) | <b>Total Gap</b><br><b>15.38***</b><br>(4.808) |                            |                                   |             |               |             |               |             |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 4: Turkey detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                                    |                                     |                                       | F(x) for Boys Reweighted to Girls  |                                     |  |                                    | Without reweighting<br>Boys are reference group |                                      |                             |                          | F(x) for Boys Reweighted to Girls |             |           |             |               |  |  |  |  |  |  |  |
|---------------------|---|------------------------------------|-------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|--|------------------------------------|---|--------------------------------------|-----------------------------|--------------------------|-----------------------------------|-------------|-----------|-------------|---------------|--|--|--|--|--|--|--|
|                     | 10th quantile                                   |                                    |                                     |                                       |                                    |                                     |  |                                    | 50th quantile                                   |                                      |                             |                          |                                   |             |           |             | 90th quantile |  |  |  |  |  |  |  |
|                     | Explained                                       | Unexplained                        | Explained                           | Unexplained                           | Explained                          | Unexplained                         | Explained                              | Unexplained                        | Explained                                       | Unexplained                          | Explained                   | Unexplained              | Explained                         | Unexplained | Explained | Unexplained |               |  |  |  |  |  |  |  |
| Lower-sec EDC       | -0.0118<br>(0.368)                              | 1.672<br>(9.911)                   | -0.0133<br>(0.271)                  | 2.077<br>(10.40)                      | -0.0994<br>(0.186)                 | -7.450<br>(7.826)                   | -0.112<br>(0.160)                      | -7.391<br>(7.614)                  | -0.170<br>(0.204)                               | -2.110<br>(5.474)                    | -0.192<br>(0.127)           | -1.66<br>(4.776)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Upper-sec           | -0.493<br>(0.480)                               | 0.754<br>(4.961)                   | -0.508<br>(0.491)                   | 1.786<br>(4.733)                      | -1.166*<br>(0.697)                 | -0.144<br>(3.929)                   | -1.201***<br>(0.414)                   | 0.109<br>(4.214)                   | -0.693<br>(0.552)                               | -0.898<br>(4.003)                    | -0.714<br>(0.476)           | -0.75<br>(3.851)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Post-sec not UNI    | 0.0155<br>(0.0407)                              | -0.251<br>(0.858)                  | 0.0154<br>(0.0192)                  | -0.127<br>(0.835)                     | 0.0522<br>(0.354)                  | 0.0712<br>(0.993)                   | 0.0518<br>(0.0780)                     | 0.0717<br>(0.973)                  | 0.0306<br>(0.284)                               | -2.194<br>(1.694)                    | 0.0304<br>(0.0714)          | -2.538*<br>(1.479)       |                                   |             |           |             |               |  |  |  |  |  |  |  |
| University degree   | -0.00728<br>(0.119)                             | -1.211<br>(1.776)                  | -0.00726<br>(0.0791)                | -0.878<br>(1.753)                     | -0.251<br>(0.408)                  | -1.431<br>(1.483)                   | -0.250**<br>(0.116)                    | -1.088<br>(1.550)                  | -0.876<br>(1.390)                               | 0.129<br>(3.862)                     | -0.873**<br>(0.358)         | -2.162<br>(3.886)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Native parents      | -0.869<br>(0.581)                               | 47.06<br>(42.77)                   | -0.787***<br>(0.256)                | 60.31<br>(50.09)                      | -0.543**<br>(0.251)                | 44.43<br>(30.17)                    | -0.492***<br>(0.158)                   | 41.89<br>(29.06)                   | -0.220<br>(0.205)                               | 9.198<br>(26.41)                     | -0.199<br>(0.160)           | 6.469<br>(27.38)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| One bookcases       | -0.402<br>(0.380)                               | 0.274<br>(3.258)                   | -0.348<br>(0.271)                   | 0.2<br>(3.431)                        | -0.959*<br>(0.505)                 | 0.244<br>(2.628)                    | -0.830***<br>(0.194)                   | 0.552<br>(2.871)                   | -1.306**<br>(0.711)                             | 5.008<br>(3.799)                     | -1.130***<br>(0.378)        | 2.919<br>(4.117)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Two bookcases       | -0.727<br>(0.604)                               | 1.783<br>(2.692)                   | -0.741<br>(0.625)                   | 1.877<br>(3.076)                      | -1.679***<br>(0.511)               | 2.001<br>(2.408)                    | -1.711***<br>(0.480)                   | 2.441<br>(2.631)                   | -3.616***<br>(1.138)                            | 7.174*<br>(4.153)                    | -3.687***<br>(0.960)        | 5.638<br>(5.307)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess H      | 0.598<br>(0.878)                                | -10.04<br>(10.56)                  | 0.538<br>(0.467)                    | -7.595<br>(10.25)                     | 0.663<br>(0.527)                   | -5.138<br>(6.451)                   | 0.596**<br>(0.291)                     | -3.743<br>(6.374)                  | -0.0892<br>(0.431)                              | -5.958<br>(7.589)                    | -0.0802<br>(0.396)          | -7.194<br>(7.432)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess M      | -0.549<br>(0.798)                               | -19.50<br>(18.14)                  | -0.520<br>(0.579)                   | -16.83<br>(17.16)                     | -0.671<br>(0.423)                  | -0.889<br>(8.568)                   | -0.635**<br>(0.310)                    | -0.195<br>(7.956)                  | 0.0528<br>(0.259)                               | 4.792<br>(6.531)                     | 0.0500<br>(0.249)           | 2.767<br>(8.644)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| TL spoken ALs       | -1.380*<br>(0.816)                              | -25.19<br>(16.04)                  | -1.398*<br>(0.829)                  | -22.58<br>(17.49)                     | -2.642***<br>(0.769)               | -3.090<br>(9.856)                   | -2.677***<br>(0.705)                   | -0.538<br>(11.06)                  | -0.156<br>(0.884)                               | -17.47<br>(12.75)                    | -0.158<br>(0.895)           | -19.34<br>(12.84)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H&SCL         | -0.00260<br>(0.224)                             | -4.366<br>(8.159)                  | -0.0763<br>(0.103)                  | -4.671<br>(7.750)                     | -0.00499<br>(0.306)                | -2.300<br>(4.874)                   | -0.146<br>(0.117)                      | -1.992<br>(4.538)                  | -0.0115<br>(0.766)                              | 12.02*<br>(6.363)                    | -0.337<br>(0.219)           | 10.62<br>(6.695)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H/SCL         | -0.542<br>(0.845)                               | -8.490<br>(14.61)                  | -0.523<br>(0.770)                   | -8.886<br>(14.87)                     | -0.726<br>(0.598)                  | -2.986<br>(8.420)                   | -0.701<br>(0.546)                      | -1.569<br>(7.437)                  | -0.665<br>(0.615)                               | 11.31<br>(8.178)                     | -1.642<br>(0.560)           | 8.797<br>(8.536)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Male teacher        | -0.294<br>(0.344)                               | -0.350<br>(9.717)                  | -0.284<br>(0.247)                   | 0.832<br>(9.498)                      | -0.251<br>(0.240)                  | 0.390<br>(6.243)                    | -0.242<br>(0.182)                      | -1.075<br>(6.182)                  | 0.313<br>(0.474)                                | -10.84<br>(10.55)                    | 0.301<br>(0.335)            | -8.282<br>(10.68)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Experience       | -0.0380<br>(0.288)                              | -0.342<br>(19.31)                  | -0.0440<br>(0.265)                  | -0.671<br>(20.61)                     | -0.186<br>(0.422)                  | -3.827<br>(11.49)                   | -0.216<br>(0.283)                      | -1.322<br>(8.873)                  | -0.205<br>(0.412)                               | -5.366<br>(15.64)                    | -0.238<br>(0.463)           | -1.786<br>(12.86)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Certificate!     | 0.0110<br>(0.0824)                              | -74.72<br>(84.68)                  | 0.0137<br>(0.102)                   | -100.5<br>(102.2)                     | -0.0321<br>(0.0239)                | -16.62<br>(68.19)                   | -0.0399<br>(0.0294)                    | -16.33<br>(79.18)                  | -0.0381<br>(0.0404)                             | -0.0530<br>(23.32)                   | -0.0474<br>(0.0494)         | -6.883<br>(22.93)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| M SCL RCS           | 0.0166<br>(0.300)                               | 3.639<br>(11.26)                   | -0.0793<br>(0.155)                  | 5.741<br>(10.41)                      | 0.0361<br>(0.571)                  | -7.414<br>(13.92)                   | -0.173<br>(0.296)                      | -2.878<br>(13.84)                  | 0.00267<br>(0.0701)                             | 6.796<br>(28.68)                     | -0.0128<br>(0.107)          | 5.764<br>(30.35)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| L SCL RSC           | -0.254<br>(0.567)                               | 0.566<br>(6.337)                   | -0.140<br>(0.298)                   | 1.991<br>(6.169)                      | -0.324<br>(0.623)                  | -1.941<br>(4.664)                   | -0.178<br>(0.322)                      | -0.0282<br>(4.707)                 | 0.0395<br>(0.302)                               | 5.950<br>(10.50)                     | 0.0217<br>(0.169)           | 5.726<br>(10.93)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. UNI Degree       | 0.172<br>(0.348)                                | 6.982<br>(24.60)                   | 0.188<br>(0.359)                    | 4.75<br>(26.18)                       | 0.203<br>(0.407)                   | -8.913<br>(14.70)                   | 0.223<br>(0.387)                       | -10.34<br>(11.58)                  | -0.538<br>(0.903)                               | -27.07<br>(24.40)                    | -0.591<br>(0.892)           | -24.07<br>(20.93)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| COMMU.>50000        | -0.0109<br>(0.569)                              | 14.36<br>(12.08)                   | -0.0423<br>(0.192)                  | 15.47<br>(12.60)                      | -0.00552<br>(0.260)                | 4.757<br>(6.996)                    | -0.0213<br>(0.0864)                    | 4.647<br>(7.768)                   | -0.0101<br>(0.558)                              | -0.858<br>(10.58)                    | -0.0391<br>(0.191)          | -1.508<br>(10.53)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Pov 50% Disadv      | -0.379<br>(0.282)                               | 1.626<br>(9.401)                   | -0.421<br>(0.311)                   | -1.989<br>(9.290)                     | -0.807*<br>(0.464)                 | 3.491<br>(7.753)                    | -0.897**<br>(0.409)                    | 2.129<br>(7.329)                   | -1.806*<br>(0.939)                              | -8.898<br>(12.13)                    | -2.008***<br>(0.692)        | -6.182<br>(12.67)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size          | 0.237<br>(0.537)                                | -89.04<br>(88.53)                  | 0.193<br>(0.437)                    | -68.87<br>(84.03)                     | -0.765<br>(0.818)                  | 7.609<br>(86.33)                    | -0.622<br>(0.592)                      | 24.61<br>(81.21)                   | 2.323<br>(2.391)                                | -106.9<br>(111.4)                    | 1.889<br>(1.333)            | -100.7<br>(114.2)        |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size sq       | -0.109<br>(0.453)                               | 37.60<br>(38.50)                   | -0.0763<br>(0.323)                  | 27.41<br>(35.77)                      | 0.733<br>(0.709)                   | -0.198<br>(39.04)                   | 0.513<br>(0.456)                       | -6.335<br>(36.32)                  | -1.885<br>(1.765)                               | 62.03<br>(51.07)                     | -1.321<br>(0.925)           | 59.54<br>(53.07)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Constant            |   | 123.9<br>(85.88)                   |                                     | 117.4<br>(110.2)                      |                                    | 10.67<br>(91.12)                    |  | -10.85<br>(97.19)                  |   | 86.91<br>(101.7)                     |                             | 96.29<br>(101.8)         |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Total (Expl/Unexpl) | <b>-6.409***</b><br>(2.195)                     | <b>4.219</b><br>(6.755)            | <b>-5.654***</b><br>(1.564)         | <b>4.147</b><br>(7.007)               | <b>-9.579***</b><br>(1.989)        | <b>9.525**</b><br>(4.376)           | <b>-10.08***</b><br>(1.231)            | <b>9.724**</b><br>(4.400)          | <b>-8.819***</b><br>(3.351)                     | <b>15.16*</b><br>(8.050)             | <b>-10.32***</b><br>(1.882) | <b>14.73*</b><br>(7.627) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Raw Gap             |   | Boys<br><b>295.9***</b><br>(4.821) | Girls<br><b>298.1***</b><br>(7.729) | Total Gap<br><b>-2.190</b><br>(6.928) | Boys<br><b>424.3***</b><br>(5.205) | Girls<br><b>424.3***</b><br>(6.057) | Total Gap<br><b>-0.0535</b><br>(4.704) | Boys<br><b>584.1***</b><br>(8.536) | Girls<br><b>577.7***</b><br>(7.330)             | Total Gap<br><b>6.344</b><br>(7.251) |                             |                          |                                   |             |           |             |               |  |  |  |  |  |  |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 5: Iran detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                              |                                 |                    | F(x) for Boys Reweighted to Girls |                              |                                |                     | Without reweighting<br>Boys are reference group |                              |                               |                   | F(x) for Boys Reweighted to Girls |             |           |             |               |  |  |  |  |  |  |  |
|---------------------|---|------------------------------|---------------------------------|--------------------|-----------------------------------|------------------------------|--------------------------------|---------------------|---|------------------------------|-------------------------------|-------------------|-----------------------------------|-------------|-----------|-------------|---------------|--|--|--|--|--|--|--|
|                     | 10th quantile                                   |                              |                                 |                    |                                   |                              |                                |                     | 50th quantile                                   |                              |                               |                   |                                   |             |           |             | 90th quantile |  |  |  |  |  |  |  |
|                     | Explained                                       | Unexplained                  | Explained                       | Unexplained        | Explained                         | Unexplained                  | Explained                      | Unexplained         | Explained                                       | Unexplained                  | Explained                     | Unexplained       | Explained                         | Unexplained | Explained | Unexplained |               |  |  |  |  |  |  |  |
| Lower-sec EDC       | 0.101<br>(0.301)                                | -5.306<br>(5.514)            | 2.152<br>(4.389)                | 8.919<br>(12.42)   | -0.0174<br>(0.0743)               | -2.509<br>(3.178)            | -0.369<br>(1.363)              | 9.443<br>(16.75)    | 0.0225<br>(0.155)                               | -0.821<br>(3.418)            | 0.478<br>(2.424)              | 10.44<br>(18.55)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Upper-sec           | -0.0751<br>(0.589)                              | -1.052<br>(4.128)            | 0.241<br>(1.800)                | 3.369<br>(5.538)   | -0.805*<br>(0.485)                | 0.155<br>(2.365)             | 2.584<br>(3.288)               | 2.155<br>(7.003)    | -1.263*<br>(0.672)                              | 6.726**<br>(3.406)           | 4.053<br>(4.982)              | 5.179<br>(9.515)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Post-sec not UNI    | 0.0953<br>(0.250)                               | -0.818<br>(1.609)            | 0.470<br>(1.237)                | 0.781<br>(2.404)   | 0.257<br>(0.301)                  | -1.237<br>(1.775)            | 1.269<br>(2.532)               | -0.487<br>(3.723)   | 0.620<br>(0.898)                                | 3.995*<br>(2.366)            | 3.058<br>(7.636)              | -2.615<br>(17.04) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| University degree   | 0.0307<br>(0.319)                               | -0.957<br>(2.494)            | -0.435<br>(1.705)               | 1.995<br>(3.112)   | -0.128<br>(0.344)                 | -1.892<br>(1.917)            | 1.808<br>(1.454)               | -1.269<br>(4.624)   | -0.546<br>(1.645)                               | 3.242<br>(3.196)             | 7.748*<br>(4.304)             | -2.134<br>(4.484) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Native parents      | -0.579<br>(0.573)                               | 36.77<br>(31.52)             | -1.686<br>(3.095)               | -4.024<br>(31.51)  | -0.461<br>(0.284)                 | 47.70**<br>(21.97)           | -1.342<br>(1.695)              | 13.59<br>(26.50)    | -0.391<br>(0.238)                               | 6.656<br>(19.08)             | -1.141<br>(1.483)             | -79.29<br>(196.5) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| One bookcases       | 0.00773<br>(0.0548)                             | -1.910<br>(1.711)            | 0.277<br>(1.451)                | -2.525<br>(2.588)  | 0.0924<br>(0.471)                 | 0.470<br>(1.940)             | 3.311<br>(3.959)               | 3.836*<br>(2.234)   | 0.168<br>(1.018)                                | 3.209<br>(3.089)             | 6.022<br>(8.311)              | -4.511<br>(7.375) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Two bookcases       | 0.220<br>(0.491)                                | -2.339<br>(2.019)            | -0.778<br>(1.936)               | -1.505<br>(1.114)  | -0.0913<br>(0.294)                | -1.723<br>(2.011)            | 0.322<br>(1.042)               | 2.734**<br>(1.376)  | -0.267<br>(0.435)                               | -2.336<br>(3.221)            | 0.944<br>(1.488)              | 1.752<br>(14.02)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess H      | 0.0273<br>(0.236)                               | 1.924<br>(5.260)             | 1.369<br>(4.641)                | -3.276<br>(12.90)  | 0.0867<br>(1.128)                 | 2.901<br>(6.244)             | 4.346<br>(8.905)               | -3.553<br>(8.023)   | 0.170<br>(1.623)                                | 9.029<br>(7.062)             | 8.506<br>(11.93)              | 5.938<br>(21.95)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess M      | -0.478<br>(0.668)                               | 4.065<br>(5.821)             | 0.485<br>(0.720)                | -7.878<br>(21.60)  | -0.427<br>(0.429)                 | 5.508<br>(4.238)             | 0.434<br>(0.499)               | -2.229<br>(10.84)   | -0.381<br>(0.474)                               | 6.888<br>(4.889)             | 0.387<br>(0.510)              | 8.526<br>(29.16)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| TL spoken ALs       | -1.767<br>(1.291)                               | 2.214<br>(7.903)             | 7.383<br>(13.18)                | -7.994<br>(7.180)  | -1.590<br>(1.473)                 | -0.953<br>(7.231)            | 6.640<br>(13.46)               | -7.677<br>(5.365)   | -0.168<br>(1.177)                               | -9.476<br>(9.028)            | 0.703<br>(4.790)              | -5.145<br>(31.56) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H&SCL         | -0.232<br>(0.762)                               | 0.808<br>(1.097)             | 0.666<br>(0.697)                | -0.927<br>(1.001)  | -0.418<br>(0.798)                 | 0.666<br>(1.620)             | 1.457<br>(0.973)               | -0.974<br>(1.534)   | -1.235<br>(2.743)                               | 4.304*<br>(5.058)            | -6.37<br>(2.207)              | -1.594<br>(5.739) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H/SCL         | 0.196<br>(0.720)                                | -1.536<br>(4.683)            | 2.982<br>(7.753)                | -3.739<br>(4.962)  | 0.240<br>(0.471)                  | 1.374<br>(5.346)             | 3.653<br>(5.357)               | -2.56<br>(4.955)    | 0.0490<br>(0.244)                               | -6.329<br>(5.575)            | 0.747<br>(4.008)              | -1.594<br>(15.06) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Male teacher        | 8.091<br>(55.08)                                | 4.387<br>(7.465)             | 8.709<br>(55.95)                | 4.612<br>(2.828)   | 0.378<br>(38.27)                  | 3.375<br>(5.675)             | 0.407<br>(38.48)               | 7.087<br>(4.586)    | 9.413<br>(36.57)                                | 3.963<br>(6.101)             | 10.13<br>(37.64)              | 10.54<br>(10.52)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Experience       | 0.528<br>(1.342)                                | -1.084<br>(16.92)            | 3.013<br>(8.987)                | -5.037<br>(13.42)  | 0.275<br>(0.977)                  | -4.118<br>(13.21)            | 1.567<br>(5.874)               | -1.255<br>(13.17)   | -0.414<br>(1.080)                               | -25.60<br>(17.28)            | -2.362<br>(7.915)             | 2.125<br>(32.56)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Certificate!     |   |                              |                                 |                    |                                   |                              |                                |                     |   |                              |                               |                   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| M SCL RCS           | -0.316<br>(1.821)                               | -10.20<br>(11.27)            | -11.94<br>(21.65)               | 3.206<br>(10.96)   | -0.370<br>(1.570)                 | -7.677<br>(12.41)            | -13.99<br>(18.98)              | 6.297<br>(11.24)    | -0.681<br>(3.577)                               | -25.20<br>(30.71)            | -25.74<br>(44.21)             | -13.79<br>(31.88) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| L SCL RCS           | 0.0785<br>(2.832)                               | -8.479*<br>(4.632)           | 35.02<br>(43.54)                | -0.856<br>(3.146)  | 0.0629<br>(2.102)                 | -4.645<br>(4.397)            | 28.05<br>(33.09)               | -1.012<br>(3.485)   | 0.0599<br>(2.763)                               | -4.579<br>(7.893)            | 26.75<br>(46.91)              | -8.639<br>(10.78) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. UNI Degree       | 0.447<br>(1.598)                                | -7.431<br>(9.660)            | -2.198<br>(7.025)               | -3.336<br>(7.591)  | -0.458<br>(0.889)                 | 2.114<br>(6.089)             | 2.252<br>(3.876)               | 2.978<br>(6.134)    | -1.546<br>(1.808)                               | 7.596<br>(9.493)             | 7.582<br>(6.620)              | 7.582<br>(16.78)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| COMMU.>50000        | -0.0877<br>(0.390)                              | -17.46*<br>(10.21)           | -3.319<br>(7.277)               | -14.98*<br>(7.919) | 0.208<br>(1.354)                  | -0.564<br>(9.181)            | 7.892<br>(12.86)               | -12.33<br>(8.329)   | 0.338<br>(2.281)                                | 11.89<br>(9.861)             | 12.81<br>(20.31)              | 1.286<br>(18.59)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Pov 50% Disadv      | -1.638<br>(1.644)                               | -4.198<br>(7.575)            | 5.257<br>(6.825)                | 0.423<br>(5.800)   | -1.811<br>(1.607)                 | -3.163<br>(5.558)            | 5.812<br>(8.376)               | 0.253<br>(4.313)    | -1.309<br>(2.013)                               | -6.943<br>(9.199)            | 4.201<br>(8.585)              | -12.31<br>(12.59) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size          | 13.49<br>(13.47)                                | 259.3<br>(208.3)             | 93.62<br>(136.6)                | -56.39<br>(195.8)  | 2.824<br>(5.624)                  | 158.3<br>(137.7)             | 19.60<br>(39.73)               | 28.72<br>(160.0)    | -5.745<br>(9.812)                               | 218.7<br>(183.4)             | -39.87<br>(102.1)             | 218.7<br>(361.5)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size sq       | -9.036<br>(11.26)                               | -106.9<br>(108.4)            | -69.21<br>(123.0)               | 44.75<br>(111.1)   | -1.582<br>(4.564)                 | -76.09<br>(72.57)            | -12.11<br>(36.73)              | 7.587<br>(97.54)    | 4.060<br>(8.364)                                | -136.3<br>(100.9)            | 31.10<br>(92.57)              | -73.95<br>(224.5) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Constant            |   | -162.2<br>(107.7)            |                                 | -25.09<br>(72.93)  |                                   | -120.2<br>(87.77)            |                                | -112.3*<br>(65.55)  |   | -65.76<br>(95.95)            |                               | -69.71<br>(328.2) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Total (Expl/Unexpl) | 8.943<br>(55.52)                                | -25.18<br>(55.83)            | 66.30<br>(75.28)                | 63.05*<br>(33.34)  | -6.725<br>(37.70)                 | 0.0366<br>(38.61)            | 60.13<br>(85.85)               | -73.11**<br>(33.48) | -4.121<br>(37.25)                               | 6.596<br>(38.08)             | 60.14<br>(69.05)              | -21.31<br>(78.97) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Raw Gap             | Boys<br>287.5***<br>(7.344)                     | Girls<br>303.7***<br>(5.504) | Total Gap<br>-16.24*<br>(9.314) |                    | Boys<br>397.8***<br>(6.456)       | Girls<br>404.5***<br>(5.387) | Total Gap<br>-6.689<br>(8.398) |                     | Boys<br>517.4***<br>(9.796)                     | Girls<br>514.9***<br>(10.17) | Total Gap<br>2.475<br>(14.02) |                   |                                   |             |           |             |               |  |  |  |  |  |  |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included



Table B. 6: Jordan detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                              |                                   |                             | F(x) for Boys Reweighted to Girls |                                 |                             |                              | Without reweighting<br>Boys are reference group |                     |                    |                   | F(x) for Boys Reweighted to Girls |             |               |             |               |             |
|---------------------|---|------------------------------|-----------------------------------|-----------------------------|-----------------------------------|---------------------------------|-----------------------------|------------------------------|---|---------------------|--------------------|-------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                   |                              | 50th quantile                     |                             | 90th quantile                     |                                 | 10th quantile               |                              | 50th quantile                                   |                     | 90th quantile      |                   | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained                                       | Unexplained                  | Explained                         | Unexplained                 | Explained                         | Unexplained                     | Explained                   | Unexplained                  | Explained                                       | Unexplained         | Explained          | Unexplained       | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | -0.0559<br>(0.481)                              | 1.355<br>(3.498)             | 0.0115<br>(0.199)                 | 14.44<br>(14.97)            | 0.0998<br>(0.341)                 | -0.367<br>(1.941)               | -0.0205<br>(0.432)          | -1.633<br>(8.300)            | -0.147<br>(0.183)                               | 1.850<br>(1.648)    | 0.0301<br>(0.178)  | -0.293<br>(3.034) |                                   |             |               |             |               |             |
| Upper-sec           | -1.738<br>(1.234)                               | 3.852<br>(7.692)             | -1.161<br>(1.934)                 | 41.99<br>(37.75)            | -0.842<br>(0.730)                 | 1.422<br>(5.612)                | -0.563<br>(0.625)           | 24.62<br>(21.51)             | -0.742<br>(0.583)                               | 7.396<br>(5.131)    | -0.496<br>(0.742)  | 6.764<br>(8.208)  |                                   |             |               |             |               |             |
| Post-sec not UNI    | -1.501<br>(1.079)                               | 2.047<br>(5.884)             | 0.434<br>(1.142)                  | 24.3<br>(24.13)             | -1.907*<br>(1.049)                | -0.0170<br>(5.366)              | 0.551<br>(1.252)            | 11.18<br>(16.17)             | -1.657**<br>(0.715)                             | 6.526**<br>(3.326)  | 0.479<br>(0.964)   | -0.842<br>(4.137) |                                   |             |               |             |               |             |
| University degree   | 1.767<br>(1.379)                                | 0.887<br>(6.339)             | -1.725<br>(2.444)                 | 26.88<br>(32.38)            | 2.221**<br>(1.055)                | -0.761<br>(5.540)               | -2.168<br>(2.431)           | 15.57<br>(20.45)             | 2.513**<br>(1.151)                              | 4.485<br>(4.403)    | -2.453<br>(2.575)  | -1.397<br>(6.506) |                                   |             |               |             |               |             |
| Native parents      | 0.127<br>(0.259)                                | -10.31<br>(11.69)            | -0.0255<br>(0.537)                | 2.996<br>(25.33)            | 0.114<br>(0.424)                  | -6.303<br>(7.964)               | -0.0229<br>(1.175)          | 7.421<br>(23.11)             | 0.440<br>(0.508)                                | -15.92*<br>(9.268)  | -0.0887<br>(1.442) | -3.629<br>(22.73) |                                   |             |               |             |               |             |
| One bookcases       | -0.564<br>(0.357)                               | 2.010<br>(4.458)             | 0.592<br>(0.536)                  | -14.13<br>(11.33)           | -0.737*<br>(0.401)                | 4.718<br>(3.601)                | 0.774<br>(0.783)            | 2.009<br>(13.61)             | -0.551<br>(0.344)                               | 1.515<br>(3.440)    | 0.579<br>(0.526)   | 0.648<br>(6.912)  |                                   |             |               |             |               |             |
| Two bookcases       | 0.0261<br>(0.0387)                              | 0.232<br>(2.853)             | -0.351<br>(0.488)                 | -2.513<br>(5.266)           | 0.101<br>(0.379)                  | 2.310<br>(3.186)                | -1.357<br>(1.189)           | -4.272<br>(6.188)            | 0.0835<br>(0.555)                               | 1.005<br>(3.742)    | -1.125<br>(2.068)  | 2.987<br>(7.723)  |                                   |             |               |             |               |             |
| Home possess H      | 0.239<br>(2.491)                                | -3.518<br>(17.79)            | -6.592<br>(7.975)                 | 14.81<br>(72.74)            | 0.184<br>(2.203)                  | -5.208<br>(6.894)               | -5.078<br>(8.699)           | -63.84<br>(58.45)            | 0.0503<br>(0.631)                               | 3.448<br>(7.372)    | -1.388<br>(2.361)  | -8.56<br>(23.82)  |                                   |             |               |             |               |             |
| Home possess M      | -4.056**<br>(2.002)                             | 5.031<br>(17.59)             | 1.704<br>(4.843)                  | 34.01<br>(61.86)            | -1.998<br>(1.283)                 | -7.493<br>(7.223)               | 0.839<br>(3.095)            | -73.91<br>(59.43)            | -0.601<br>(0.578)                               | 0.532<br>(6.009)    | 0.252<br>(0.902)   | -2.681<br>(18.97) |                                   |             |               |             |               |             |
| TL spoken ALs       | -0.305<br>(0.581)                               | -1.465<br>(14.44)            | -0.861<br>(2.123)                 | 13.62<br>(38.87)            | -1.069<br>(0.945)                 | -12.00<br>(9.461)               | -3.022<br>(3.993)           | -43.01<br>(26.69)            | -0.457<br>(0.501)                               | -0.623<br>(10.32)   | -1.293<br>(2.125)  | 8.692<br>(23.13)  |                                   |             |               |             |               |             |
| PC at H&SCL         | 0.315<br>(0.979)                                | -6.763<br>(12.48)            | 0.797<br>(1.892)                  | 0.0442<br>(15.38)           | -0.197<br>(0.425)                 | 3.369<br>(10.42)                | -0.499<br>(1.048)           | 47.7<br>(40.40)              | -0.277<br>(0.371)                               | -0.651<br>(8.965)   | -0.700<br>(0.822)  | 30.31<br>(37.52)  |                                   |             |               |             |               |             |
| PC at H/SCL         | -0.175<br>(1.839)                               | -10.43<br>(12.72)            | -1.467<br>(3.076)                 | -8.456<br>(21.54)           | -0.0732<br>(0.719)                | -0.614<br>(7.387)               | -0.614<br>(1.379)           | 6.228<br>(34.52)             | 0.000147<br>(0.186)                             | 1.860<br>(7.593)    | 0.00123<br>(0.433) | 23.02<br>(25.57)  |                                   |             |               |             |               |             |
| Male teacher        | 23.44<br>(21.85)                                | 1.316*<br>(0.726)            | 22.96<br>(21.41)                  | 0.235<br>(1.157)            | 14.96<br>(0.520)                  | 0.523<br>(26.96)                | 0.401<br>(1.442)            | 13.30<br>(21.63)             | 0.863<br>(0.593)                                | 13.02<br>(21.22)    | 1.286<br>(0.852)   |                   |                                   |             |               |             |               |             |
| T. Experience       | 0.0648<br>(0.364)                               | -3.342<br>(14.53)            | -0.294<br>(1.124)                 | -25.08<br>(38.88)           | -0.0503<br>(0.381)                | -13.33<br>(11.92)               | 0.229<br>(0.923)            | -34.43<br>(66.17)            | -0.175<br>(1.593)                               | -23.45**<br>(9.639) | 0.793<br>(2.876)   | -98.68<br>(60.09) |                                   |             |               |             |               |             |
| T. Certificate!     | 0.276<br>(0.857)                                | 8.646<br>(16.52)             | -0.839<br>(2.502)                 | -4.717<br>(34.28)           | 0.0401<br>(1.025)                 | -0.557<br>(17.71)               | -0.122<br>(2.671)           | 8.166<br>(85.72)             | 0.0131<br>(0.827)                               | -1.648<br>(15.36)   | -0.0399<br>(2.941) | 17.61<br>(50.80)  |                                   |             |               |             |               |             |
| M SCL RCS           | 0.140<br>(1.755)                                | -22.26<br>(16.77)            | 0.296<br>(3.881)                  | -44.8<br>(37.51)            | 0.112<br>(0.711)                  | -21.16<br>(18.59)               | 0.237<br>(1.819)            | -59.19<br>(79.92)            | 0.133<br>(1.370)                                | -11.71<br>(14.92)   | 0.281<br>(3.104)   | -109.9<br>(77.84) |                                   |             |               |             |               |             |
| L SCL RSC           | -0.0257<br>(1.823)                              | -6.501*<br>(3.342)           | -3.524<br>(2.283)                 | -5.699<br>(5.034)           | -0.0223<br>(1.094)                | -7.862**<br>(3.359)             | -3.058<br>(2.155)           | -11.89<br>(9.549)            | -0.0179<br>(1.169)                              | -3.769<br>(3.109)   | -2.445<br>(1.725)  | -15.56<br>(10.42) |                                   |             |               |             |               |             |
| T. UNI Degree       | -1.713<br>(2.561)                               | 55.01<br>(40.57)             | 0.158<br>(4.889)                  | 57.63<br>(38.64)            | -1.224<br>(1.593)                 | 34.30<br>(34.77)                | 0.113<br>(2.571)            | -26.64<br>(76.46)            | -0.529<br>(0.914)                               | 25.90<br>(35.17)    | 0.0490<br>(1.050)  | 46.39<br>(65.03)  |                                   |             |               |             |               |             |
| COMMU.>50000        | 0.452<br>(1.393)                                | -8.241<br>(9.902)            | 0.0890<br>(0.512)                 | -21.58<br>(17.68)           | 2.316<br>(2.124)                  | -3.664<br>(8.102)               | 0.456<br>(4.389)            | -79.98***<br>(24.92)         | 1.851<br>(1.724)                                | -1.388<br>(6.710)   | 0.364<br>(3.721)   | -14.27<br>(18.67) |                                   |             |               |             |               |             |
| Pov 50% Disadv      | 2.139<br>(2.575)                                | -1.786<br>(9.604)            | 0.564<br>(5.048)                  | -9.768<br>(19.26)           | 1.838<br>(2.025)                  | -1.984<br>(10.17)               | 0.485<br>(3.021)            | 46.52<br>(29.12)             | 0.327<br>(1.227)                                | 6.246<br>(7.522)    | 0.0861<br>(0.866)  | -9.626<br>(16.81) |                                   |             |               |             |               |             |
| Class size          | 0.958<br>(6.916)                                | -27.11<br>(207.4)            | -2.889<br>(15.81)                 | 171.3<br>(467.6)            | 1.979<br>(3.741)                  | -27.12<br>(180.8)               | -5.966<br>(9.999)           | -51.91<br>(839.6)            | -0.0892<br>(3.462)                              | 172.3<br>(172.3)    | 0.269<br>(8.961)   | 690.1<br>(870.3)  |                                   |             |               |             |               |             |
| Class size sq       | 0.725<br>(6.401)                                | -10.98<br>(111.1)            | -2.180<br>(15.79)                 | -59.47<br>(269.7)           | 1.094<br>(5.386)                  | -18.12<br>(91.09)               | -3.289<br>(12.70)           | 18.21<br>(487.6)             | 1.586<br>(3.663)                                | -95.96<br>(86.07)   | -4.770<br>(10.21)  | -351.8<br>(389.1) |                                   |             |               |             |               |             |
| Constant            | (161.7)   | -19.02                       | (252.3)                           | -246.6                      | (122.6)                           | 56.07                           | (254.3)                     | 254.3                        | (133.7)   | -106.0              | (476.0)            | -249.2            |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | 13.68<br>(22.31)                                | -51.54**<br>(20.53)          | 18.51<br>(25.79)                  | -15.00<br>(26.72)           | 11.56<br>(29.48)                  | -29.94<br>(29.45)               | -4.246<br>(28.49)           | 22.95<br>(48.78)             | 15.50<br>(23.50)                                | -23.68<br>(24.65)   | -2.832<br>(18.06)  | -28.07<br>(32.72) |                                   |             |               |             |               |             |
| Raw Gap             | Boys<br>274.0***<br>(7.372)                     | Girls<br>311.9***<br>(8.635) | Total Gap<br>-37.86***<br>(10.99) | Boys<br>422.9***<br>(6.733) | Girls<br>441.2***<br>(7.779)      | Total Gap<br>-18.38*<br>(10.53) | Boys<br>551.7***<br>(4.355) | Girls<br>559.9***<br>(5.762) | Total Gap<br>-8.183<br>(7.273)                  |                     |                    |                   |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, Dummy controls for missing observations included

Table B. 7: Saudi Arabia detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group  |   |  |                                | F(x) for Boys Reweighted to Girls                |   |  |                                   | Without reweighting<br>Boys are reference group  |   |  |                                | F(x) for Boys Reweighted to Girls |  |             |  |               |  |             |  |
|---------------------|--|---|--|--------------------------------|--|---|--|-----------------------------------|--|---|--|--------------------------------|-----------------------------------|--|-------------|--|---------------|--|-------------|--|
|                     |  |   |  |                                |  |   |  |                                   | 10th quantile                                    |   |  |                                | 50th quantile                     |  |             |  | 90th quantile |  |             |  |
|                     | Explained  |   | Unexplained  |                                | Explained  |   | Unexplained  |                                   | Explained  |   | Unexplained  |                                | Explained                         |  | Unexplained |  | Explained     |  | Unexplained |  |
| Lower-sec EDC       | 0.268<br>(0.332)                                 | -2.092<br>(3.257)                                 | -1.751<br>(2.098)                                      | 11.57<br>(48.66)               | 0.141<br>(0.278)                                 | -4.004<br>(2.455)                                 | -0.919<br>(1.389)                                      | -2.813<br>(4.912)                 | 0.154<br>(0.357)                                 | -3.463<br>(2.957)                                 | -1.003<br>(1.640)                                    | -1.654<br>(5.177)              |                                   |  |             |  |               |  |             |  |
| Upper-sec           | 0.0751<br>(0.257)                                | -1.964<br>(4.015)                                 | 1.706<br>(4.873)                                       | 0.902<br>(40.13)               | 0.210<br>(0.268)                                 | -3.836<br>(2.725)                                 | 4.764<br>(6.000)                                       | -4<br>(3.892)                     | 0.352<br>(0.444)                                 | -3.315<br>(3.453)                                 | 7.987<br>(8.255)                                     | 0.767<br>(3.145)               |                                   |  |             |  |               |  |             |  |
| Post-sec not UNI    | -0.0625<br>(0.233)                               | -0.0203<br>(1.131)                                | 0.235<br>(0.690)                                       | 4.078<br>(17.92)               | -0.273<br>(0.298)                                | 0.354<br>(1.049)                                  | 1.027<br>(0.770)                                       | -1.014<br>(0.930)                 | -0.102<br>(0.269)                                | -0.0371<br>(1.464)                                | 0.382<br>(0.934)                                     | 2.787<br>(3.099)               |                                   |  |             |  |               |  |             |  |
| University degree   | -0.0404<br>(0.149)                               | -1.648<br>(5.286)                                 | 0.490<br>(1.773)                                       | 36.38<br>(85.48)               | -0.106<br>(0.160)                                | -6.067<br>(3.883)                                 | 1.291<br>(1.552)                                       | -6.635<br>(5.834)                 | -0.187<br>(0.483)                                | -5.795<br>(6.603)                                 | 2.272<br>(2.777)                                     | 18.23<br>(21.09)               |                                   |  |             |  |               |  |             |  |
| Native parents      | 0.0955<br>(0.547)                                | -0.842<br>(10.61)                                 | 0.393<br>(2.135)                                       | -40.18<br>(61.56)              | 0.313<br>(0.436)                                 | 6.114<br>(7.333)                                  | 1.290<br>(1.780)                                       | 6.262<br>(13.75)                  | 1.357<br>(1.020)                                 | -6.378<br>(12.05)                                 | 5.586**<br>(2.585)                                   | 5.757<br>(21.98)               |                                   |  |             |  |               |  |             |  |
| One bookcases       | -0.814<br>(1.108)                                | 2.170<br>(5.380)                                  | 0.0699<br>(0.408)                                      | -24.52<br>(60.97)              | -1.630<br>(1.010)                                | 0.993<br>(3.624)                                  | 0.140<br>(2.247)                                       | -2.017<br>(4.764)                 | -2.683<br>(1.692)                                | 5.528<br>(5.574)                                  | 0.230<br>(3.388)                                     | 12.09<br>(11.52)               |                                   |  |             |  |               |  |             |  |
| Two bookcases       | 0.147<br>(0.802)                                 | -0.680<br>(3.317)                                 | -0.202<br>(1.085)                                      | -17.69<br>(50.63)              | -0.369<br>(0.531)                                | -0.775<br>(2.549)                                 | 0.507<br>(0.721)                                       | -0.763<br>(2.116)                 | -1.208<br>(0.960)                                | -0.0716<br>(3.558)                                | 1.660<br>(1.269)                                     | 7.696<br>(9.321)               |                                   |  |             |  |               |  |             |  |
| Home possess H      | -8.180***<br>(3.125)                             | 17.77<br>(16.31)                                  | 9.278<br>(9.013)                                       | 22.52<br>(92.00)               | -6.917***<br>(1.695)                             | 12.87<br>(9.816)                                  | 7.846<br>(5.960)                                       | -3.118<br>(15.98)                 | -5.237**<br>(2.118)                              | 9.336<br>(9.285)                                  | 5.940<br>(5.279)                                     | 24.84<br>(30.41)               |                                   |  |             |  |               |  |             |  |
| Home possess M      | 0.783<br>(1.107)                                 | 15.70<br>(9.639)                                  | -16.00*<br>(8.710)                                     | 6.076<br>(79.69)               | 0.472<br>(0.557)                                 | 6.857<br>(8.315)                                  | -9.647**<br>(4.799)                                    | -6.655<br>(8.500)                 | 0.174<br>(0.313)                                 | 2.820<br>(5.385)                                  | -3.556<br>(3.142)                                    | -6.776<br>(4.490)              |                                   |  |             |  |               |  |             |  |
| TL spoken ALs       | -0.274<br>(1.111)                                | 3.099<br>(5.741)                                  | -0.767<br>(3.104)                                      | 10.83<br>(44.82)               | -0.688<br>(1.090)                                | -1.857<br>(5.735)                                 | -1.924<br>(3.305)                                      | 3.434<br>(8.023)                  | -1.457<br>(1.191)                                | -4.600<br>(7.529)                                 | -4.076<br>(3.408)                                    | 38.91<br>(33.19)               |                                   |  |             |  |               |  |             |  |
| PC at H&SCL         | -4.775***<br>(1.611)                             | -1.356<br>(1.787)                                 | -4.175**<br>(2.005)                                    | 2.428<br>(9.851)               | -3.305*<br>(1.730)                               | -0.871<br>(1.522)                                 | -2.889<br>(1.898)                                      | 0.469<br>(1.351)                  | -0.894<br>(2.091)                                | 0.859<br>(1.515)                                  | -0.781<br>(1.857)                                    | 0.337<br>(1.766)               |                                   |  |             |  |               |  |             |  |
| PC at H/SCL         | 3.168***<br>(1.149)                              | -10.93<br>(10.04)                                 | 7.158**<br>(3.033)                                     | 30.62<br>(34.89)               | 2.384**<br>(1.049)                               | -2.736<br>(6.398)                                 | 5.387**<br>(2.605)                                     | 10.16**<br>(4.498)                | -0.381<br>(1.649)                                | 9.397<br>(9.143)                                  | -0.861<br>(3.732)                                    | 6.909<br>(9.181)               |                                   |  |             |  |               |  |             |  |
| Male teacher        | 17.98<br>(36.14)                                 | 0.149<br>(0.261)                                  | 17.70<br>(35.59)                                       | -0.19<br>(1.043)               | 25.21<br>(19.82)                                 | 0.152<br>(0.120)                                  | 24.83<br>(19.46)                                       | -0.116<br>(0.170)                 | -19.00<br>(36.55)                                | -0.0288<br>(0.0828)                               | -18.71<br>(36.00)                                    | -0.424<br>(0.323)              |                                   |  |             |  |               |  |             |  |
| T. Experience       | -0.562<br>(1.562)                                | -10.26<br>(9.855)                                 | -0.456<br>(1.339)                                      | 55.05<br>(162.5)               | 0.130<br>(1.241)                                 | -9.188<br>(7.784)                                 | 0.105<br>(1.060)                                       | -9.668<br>(9.691)                 | 0.611<br>(1.279)                                 | -4.447<br>(7.865)                                 | 0.496<br>(1.042)                                     | -4.331<br>(12.52)              |                                   |  |             |  |               |  |             |  |
| T. Certificate!     |  |   |  |                                |  |   |  |                                   |  |   |  |                                |                                   |  |             |  |               |  |             |  |
| M SCL RCS           | -0.140<br>(0.501)                                | 16.83<br>(15.33)                                  | -0.799<br>(3.315)                                      | -12.61<br>(92.71)              | -0.248<br>(0.616)                                | 32.73**<br>(15.01)                                | -1.417<br>(3.196)                                      | 25.67***<br>(9.605)               | 0.433<br>(0.678)                                 | 19.61<br>(20.80)                                  | 2.474<br>(4.275)                                     | 27.73**<br>(12.99)             |                                   |  |             |  |               |  |             |  |
| L SCL RSC           | 0.776<br>(1.974)                                 | 1.666<br>(5.560)                                  | -1.197<br>(2.562)                                      | -16.93<br>(36.01)              | 0.484<br>(1.623)                                 | 4.929<br>(4.828)                                  | -0.747<br>(2.213)                                      | 7.552**<br>(3.344)                | 1.221<br>(1.983)                                 | 2.250<br>(5.535)                                  | -1.885<br>(2.599)                                    | 20.39*<br>(11.59)              |                                   |  |             |  |               |  |             |  |
| T. UNI Degree       | -0.164<br>(0.894)                                | 9.304<br>(27.16)                                  | 0.0434<br>(0.174)                                      | 38.83<br>(267.3)               | -0.0127<br>(1.059)                               | 17.29<br>(27.55)                                  | 0.00336<br>(0.520)                                     | -14.13<br>(39.26)                 | -0.476<br>(2.123)                                | 11.53<br>(47.37)                                  | 0.126<br>(0.706)                                     | -76.4<br>(81.14)               |                                   |  |             |  |               |  |             |  |
| COMMU.>50000        | -0.311<br>(1.395)                                | 1.047<br>(7.515)                                  | 4.999<br>(5.466)                                       | -5.216<br>(142.9)              | -0.358<br>(1.479)                                | -0.841<br>(6.356)                                 | 5.758<br>(4.100)                                       | -5.655<br>(8.539)                 | -0.603<br>(1.908)                                | 2.833<br>(7.440)                                  | 9.693*<br>(5.096)                                    | 2.568<br>(9.263)               |                                   |  |             |  |               |  |             |  |
| Pov 50% Disadv      | 0.0792<br>(0.357)                                | 0.205<br>(3.172)                                  | -0.530<br>(1.712)                                      | -14.29<br>(36.45)              | 0.362<br>(1.201)                                 | -3.049<br>(2.792)                                 | -2.421<br>(1.872)                                      | 1.737<br>(2.546)                  | 0.115<br>(0.291)                                 | -0.697<br>(2.784)                                 | -0.766<br>(1.593)                                    | 8.225<br>(5.720)               |                                   |  |             |  |               |  |             |  |
| Class size          | -0.0638<br>(2.814)                               | 21.81<br>(78.84)                                  | 0.0251<br>(1.210)                                      | 331.2<br>(979.7)               | -1.187<br>(2.747)                                | 52.15<br>(54.39)                                  | 0.468<br>(2.098)                                       | 100.3<br>(87.15)                  | -0.784<br>(4.561)                                | 37.97<br>(70.19)                                  | 0.309<br>(3.365)                                     | 317.7<br>(209.4)               |                                   |  |             |  |               |  |             |  |
| Class size sq       | 1.300<br>(10.32)                                 | -12.32<br>(40.88)                                 | -0.383<br>(3.308)                                      | -181.2<br>(531.7)              | 6.428<br>(7.016)                                 | -33.05<br>(27.90)                                 | -1.895<br>(2.613)                                      | -54.92<br>(49.18)                 | 4.859<br>(12.38)                                 | -23.23<br>(42.20)                                 | -1.433<br>(4.531)                                    | -186.2<br>(126.2)              |                                   |  |             |  |               |  |             |  |
| Constant            |  | -98.18<br>(63.97)                                 |  | -233.2<br>(68.4)               |  | -121.9**<br>(60.51)                               |  | 70.66<br>(69.64)                  |  | -41.07<br>(58.80)                                 |  | -117.1<br>(73.63)              |                                   |  |             |  |               |  |             |  |
| Total (Expl/Unexpl) | <b>11.00</b><br><b>(36.23)</b>                   | <b>-44.89</b><br><b>(34.60)</b>                   | <b>-1.477</b><br><b>(35.21)</b>                        | <b>48.44</b><br><b>(195.2)</b> | <b>23.07</b><br><b>(20.94)</b>                   | <b>-47.34**</b><br><b>(19.79)</b>                 | <b>13.65</b><br><b>(15.43)</b>                         | <b>115.1***</b><br><b>(18.45)</b> | <b>-19.67</b><br><b>(34.32)</b>                  | <b>9.116</b><br><b>(33.67)</b>                    | <b>-9.293</b><br><b>(42.98)</b>                      | <b>114.1</b><br><b>(83.30)</b> |                                   |  |             |  |               |  |             |  |
| Raw Gap             | <b>Boys</b><br><b>216.9***</b><br><b>(5.569)</b> | <b>Girls</b><br><b>250.8***</b><br><b>(5.555)</b> | <b>Total Gap</b><br><b>-33.88***</b><br><b>(7.671)</b> |                                | <b>Boys</b><br><b>317.7***</b><br><b>(5.359)</b> | <b>Girls</b><br><b>342.0***</b><br><b>(4.030)</b> | <b>Total Gap</b><br><b>-24.27***</b><br><b>(7.012)</b> |                                   | <b>Boys</b><br><b>423.5***</b><br><b>(4.361)</b> | <b>Girls</b><br><b>434.1***</b><br><b>(3.902)</b> | <b>Total Gap</b><br><b>-10.55*</b><br><b>(5.760)</b> |                                |                                   |  |             |  |               |  |             |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 8: Egypt detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                              |                                 |                             | F(x) for Boys Reweighted to Girls |                                 |                             |                              | Without reweighting<br>Boys are reference group |                     |                      |                     | F(x) for Boys Reweighted to Girls |             |           |             |               |  |  |  |  |  |  |  |
|---------------------|---|------------------------------|---------------------------------|-----------------------------|-----------------------------------|---------------------------------|-----------------------------|------------------------------|---|---------------------|----------------------|---------------------|-----------------------------------|-------------|-----------|-------------|---------------|--|--|--|--|--|--|--|
|                     | 10th quantile                                   |                              |                                 |                             |                                   |                                 |                             |                              | 50th quantile                                   |                     |                      |                     |                                   |             |           |             | 90th quantile |  |  |  |  |  |  |  |
|                     | Explained                                       | Unexplained                  | Explained                       | Unexplained                 | Explained                         | Unexplained                     | Explained                   | Unexplained                  | Explained                                       | Unexplained         | Explained            | Unexplained         | Explained                         | Unexplained | Explained | Unexplained |               |  |  |  |  |  |  |  |
| Lower-sec EDC       | -0.119<br>(0.597)                               | -1.889<br>(7.652)            | -0.120<br>(0.624)               | -1.177<br>(6.698)           | -0.603<br>(0.499)                 | 4.003<br>(5.206)                | -0.607<br>(0.402)           | 4.905<br>(6.242)             | -0.157<br>(0.381)                               | 1.194<br>(3.838)    | -0.158<br>(0.390)    | 0.315<br>(4.472)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Upper-sec           | -0.351<br>(0.333)                               | 0.731<br>(4.135)             | -0.378<br>(0.271)               | 0.418<br>(3.874)            | -0.851*<br>(0.515)                | 3.781<br>(2.429)                | -0.917***<br>(0.278)        | 3.647<br>(3.176)             | -0.796<br>(0.507)                               | 5.105*<br>(2.746)   | -0.859***<br>(0.333) | 3.761<br>(2.867)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Post-sec not UNI    | 0.00654<br>(0.251)                              | -0.673<br>(4.749)            | 0.000372<br>(0.126)             | -0.817<br>(4.277)           | 0.0179<br>(0.745)                 | 1.164<br>(2.773)                | 0.00102<br>(0.370)          | 1.694<br>(3.120)             | 0.0246<br>(0.850)                               | 2.329<br>(4.696)    | 0.00140<br>(0.417)   | 1.189<br>(4.843)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| University degree   | -0.0120<br>(0.495)                              | -0.322<br>(4.285)            | -0.0128<br>(0.521)              | -0.369<br>(3.872)           | 0.203<br>(0.401)                  | 1.661<br>(2.074)                | 0.216<br>(0.430)            | 1.859<br>(2.358)             | 0.583<br>(0.476)                                | 2.418<br>(2.482)    | 0.621<br>(0.473)     | 2.286<br>(2.874)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Native parents      | -1.398<br>(1.333)                               | 6.533<br>(16.02)             | -1.779**<br>(0.757)             | 11.32<br>(19.82)            | -2.295<br>(2.075)                 | 22.78***<br>(8.730)             | -2.921***<br>(0.519)        | 21.60**<br>(9.775)           | -1.327<br>(1.222)                               | 15.34*<br>(7.825)   | -1.689***<br>(0.367) | 13.8<br>(9.346)     |                                   |             |           |             |               |  |  |  |  |  |  |  |
| One bookcases       | -0.249<br>(0.199)                               | 2.713<br>(2.998)             | -0.280<br>(0.218)               | 2.463<br>(2.737)            | -0.338<br>(0.230)                 | 1.053<br>(3.297)                | -0.380<br>(0.244)           | -0.19<br>(3.134)             | -0.360<br>(0.335)                               | 2.619<br>(3.393)    | -0.405<br>(0.258)    | 1.595<br>(3.049)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Two bookcases       | -0.0226<br>(0.122)                              | 0.442<br>(2.047)             | -0.00992<br>(0.0676)            | 0.898<br>(2.060)            | -0.0190<br>(0.187)                | -0.382<br>(1.616)               | -0.00834<br>(0.0873)        | -0.289<br>(1.712)            | 0.109<br>(0.0960)                               | 1.366<br>(1.576)    | 0.0478<br>(0.0442)   | 1.21<br>(1.552)     |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess H      | 0.529<br>(1.480)                                | -7.679<br>(5.672)            | 0.693<br>(0.610)                | -5.262<br>(6.548)           | 0.799<br>(1.928)                  | -1.932<br>(4.115)               | 1.046<br>(0.771)            | -1.262<br>(4.158)            | 0.609<br>(1.518)                                | 0.303<br>(4.464)    | 0.797<br>(0.598)     | -1.304<br>(4.542)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Home possess M      | -0.991<br>(0.777)                               | -13.54<br>(12.67)            | -1.103*<br>(0.609)              | -11.35<br>(13.86)           | -1.334<br>(1.004)                 | -6.865<br>(7.173)               | -1.484**<br>(0.622)         | -2.782<br>(8.178)            | -0.786<br>(0.565)                               | -2.204<br>(6.563)   | -0.875*<br>(0.451)   | -0.4<br>(7.443)     |                                   |             |           |             |               |  |  |  |  |  |  |  |
| TL spoken ALs       | 0.0541<br>(0.361)                               | 12.19<br>(8.039)             | 0.0564<br>(0.363)               | 10.56<br>(8.553)            | -0.516<br>(0.580)                 | 11.42*<br>(6.714)               | -0.538<br>(0.344)           | 11.1<br>(7.731)              | -0.805<br>(0.653)                               | 8.510<br>(7.288)    | -0.840***<br>(0.318) | 11.13<br>(7.477)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H&SCL         | -1.601*<br>(0.862)                              | 1.324<br>(4.196)             | -1.522**<br>(0.699)             | -0.809<br>(4.881)           | -1.793*<br>(0.962)                | -0.809<br>(3.252)               | -1.704***<br>(0.637)        | -0.980<br>(3.572)            | 0.129<br>(0.434)                                | 3.442<br>(3.223)    | 0.123<br>(0.414)     | 2.514<br>(3.268)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| PC at H/SCL         | 2.666<br>(1.667)                                | 2.216<br>(12.08)             | 2.543<br>(1.552)                | 0.531<br>(13.13)            | 2.305**<br>(0.986)                | 3.403<br>(9.082)                | 2.198***<br>(0.820)         | 0.469<br>(9.467)             | 1.380*<br>(0.812)                               | 8.318<br>(9.492)    | 1.316*<br>(0.692)    | 4.857<br>(10.60)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Male teacher        | -0.117<br>(2.259)                               | 7.558<br>(9.412)             | -0.114<br>(2.169)               | 3.896<br>(9.710)            | 1.455<br>(2.036)                  | 5.920<br>(9.740)                | 1.414<br>(1.836)            | 3.165<br>(10.98)             | 0.805<br>(1.524)                                | -2.345<br>(9.594)   | 0.783<br>(1.397)     | -3.579<br>(11.05)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Experience       | -0.997<br>(1.325)                               | 5.121<br>(17.24)             | 0.349<br>(0.972)                | 4.445<br>(18.59)            | -0.809<br>(1.234)                 | -0.114<br>(12.79)               | 0.283<br>(0.944)            | -2.565<br>(14.45)            | 0.0263<br>(0.566)                               | -2.750<br>(12.11)   | -0.00922<br>(0.286)  | -8.268<br>(12.84)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. Certificate!     | 0.207<br>(0.830)                                | 16.68<br>(13.91)             | 0.801<br>(0.641)                | 15.28<br>(12.98)            | 0.0902<br>(0.550)                 | 5.973<br>(8.582)                | 0.350<br>(0.424)            | 7.261<br>(9.065)             | -0.0972<br>(1.133)                              | -13.12<br>(10.60)   | -0.377<br>(0.742)    | -14.89<br>(10.97)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| M SCL RCS           | -0.0441<br>(0.884)                              | -4.099<br>(14.64)            | -0.0333<br>(0.457)              | -5.334<br>(13.50)           | 0.557<br>(1.265)                  | -19.47*<br>(10.38)              | 0.421<br>(0.446)            | -23.16**<br>(10.72)          | 0.591<br>(1.086)                                | -19.79**<br>(10.02) | 0.446<br>(0.429)     | -21.84**<br>(10.32) |                                   |             |           |             |               |  |  |  |  |  |  |  |
| L SCL RSC           | 0.0371<br>(0.186)                               | 1.935<br>(2.638)             | 0.0668<br>(0.228)               | 2.152<br>(2.407)            | -0.0916<br>(0.803)                | 0.631<br>(1.522)                | -0.165<br>(0.188)           | 1.06<br>(1.996)              | -0.0902<br>(0.548)                              | 0.549<br>(1.192)    | -0.163<br>(0.167)    | 0.791<br>(1.373)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| T. UNI Degree       | 4.608<br>(31.25)                                | 54.38<br>(289.0)             | 5.658<br>(38.28)                | 50.85<br>(172.3)            | 5.534<br>(30.42)                  | 46.30<br>(280.9)                | 6.795<br>(37.27)            | 57.82<br>(353.3)             | -1.744<br>(7.870)                               | -42.05<br>(73.00)   | -2.141<br>(9.656)    | -47.01<br>(80.35)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| COMMU.>50000        | 0.964<br>(1.077)                                | -1.524<br>(7.090)            | 1.050<br>(1.141)                | -0.675<br>(6.471)           | 0.789<br>(1.080)                  | -0.160<br>(5.315)               | 0.859<br>(0.815)            | 0.798<br>(5.981)             | 0.868<br>(1.129)                                | 7.832<br>(5.600)    | 0.946<br>(0.857)     | 8.121<br>(5.975)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Pov 50% Disadv      | 0.128<br>(0.696)                                | 8.858<br>(7.788)             | 0.0601<br>(0.280)               | 11.93<br>(8.037)            | 0.198<br>(0.351)                  | 11.26<br>(8.456)                | 0.0931<br>(0.160)           | 12.87<br>(9.068)             | -0.345<br>(0.654)                               | 14.55*<br>(8.239)   | -0.163<br>(0.276)    | 16.77**<br>(8.506)  |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size          | -0.601<br>(3.383)                               | 105.1<br>(169.8)             | -0.635<br>(2.976)               | 185.6<br>(168.9)            | -0.947<br>(3.632)                 | 134.2<br>(228.5)                | -1.001<br>(3.356)           | 274.9<br>(280.6)             | 1.747<br>(4.612)                                | -136.8<br>(149.0)   | 1.847<br>(3.665)     | -31.38<br>(138.7)   |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Class size sq       | 1.610<br>(3.268)                                | -70.19<br>(94.30)            | 1.646<br>(3.105)                | -124.3<br>(94.77)           | 1.988<br>(4.319)                  | -83.53<br>(127.0)               | 2.033<br>(3.790)            | -169.8<br>(161.5)            | -0.631<br>(4.209)                               | 61.62<br>(83.84)    | -0.645<br>(3.621)    | 0.951<br>(79.27)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Constant            | -158.0<br>(356.5)                               | -158.0<br>(356.5)            | -181.5<br>(224.8)               | -181.5<br>(224.8)           | -172.5<br>(343.2)                 | -172.5<br>(343.2)               | -235.0<br>(447.9)           | -235.0<br>(447.9)            | 83.50<br>(129.9)                                | 83.50<br>(129.9)    | 62.06<br>(115.3)     | 62.06<br>(115.3)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Total (Expl/Unexpl) | -1.235<br>(18.90)                               | -16.14<br>(20.90)            | -4.031<br>(4.400)               | -15.16<br>(13.47)           | -0.477<br>(17.98)                 | -13.89<br>(20.39)               | -3.588<br>(2.847)           | -13.82<br>(23.31)            | 0.237<br>(7.173)                                | -7.400<br>(8.619)   | 0.823<br>(2.527)     | 7.243<br>(9.706)    |                                   |             |           |             |               |  |  |  |  |  |  |  |
| Raw Gap             | Boys<br>248.7***<br>(7.345)                     | Girls<br>266.1***<br>(7.242) | Total Gap<br>-17.38*<br>(9.133) | Boys<br>384.8***<br>(5.288) | Girls<br>399.2***<br>(6.077)      | Total Gap<br>-14.37*<br>(7.599) | Boys<br>517.0***<br>(5.725) | Girls<br>524.1***<br>(4.614) | Total Gap<br>-7.164<br>(7.788)                  |                     |                      |                     |                                   |             |           |             |               |  |  |  |  |  |  |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 9: Algeria detailed decomposition of maths test scores by gender (girls as reference)

| VARIABLES          | Without reweighting<br>Girls are reference group |                            |                                 |                           | F(x) for girls Reweighted to<br>Boys |                                  |                             |                            | Without reweighting<br>Girls are reference group |                          |                          |                          | F(x) for girls Reweighted to<br>Boys |             |  |  |
|--------------------|--|----------------------------|---------------------------------|---------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------------------|-------------|--|--|
|                    | 10th quantile                                    |                            |                                 |                           | 50th quantile                        |                                  |                             |                            | 90th quantile                                    |                          |                          |                          |                                      |             |  |  |
|                    | Explained  | Unexplained                | Explained                       | Unexplained               | Explained                            | Unexplained                      | Explained                   | Unexplained                | Explained  | Unexplained              | Explained                | Unexplained              | Explained                            | Unexplained |  |  |
| Lower-sec EDC      | 0.00503<br>(0.131)                               | 0.986<br>(3.051)           | 0.0146<br>(0.0257)              | 0.783<br>(3.117)          | 0.00327<br>(0.0663)                  | -1.104<br>(1.864)                | 0.00948<br>(0.0171)         | -1.036<br>(1.904)          | 0.00493<br>(0.139)                               | -0.992<br>(2.135)        | 0.0143<br>(0.0239)       | -1.196<br>(2.154)        |                                      |             |  |  |
| Upper-sec          | 0.0396<br>(0.411)                                | 1.470<br>(2.065)           | 0.0389<br>(0.404)               | 1.302<br>(2.135)          | -0.125<br>(0.309)                    | -0.0414<br>(2.005)               | -0.123<br>(0.303)           | -0.174<br>(1.977)          | -0.164<br>(0.257)                                | -0.103<br>(2.175)        | -0.161<br>(0.258)        | -0.350<br>(2.127)        |                                      |             |  |  |
| Post-sec not UNI   | -0.0276<br>(0.301)                               | 0.543<br>(1.574)           | -0.0272<br>(0.292)              | 0.530<br>(1.553)          | -0.179<br>(0.209)                    | -0.508<br>(0.963)                | -0.176<br>(0.196)           | -0.510<br>(1.007)          | -0.197<br>(0.187)                                | 0.213<br>(1.490)         | -0.194<br>(0.180)        | 0.180<br>(1.531)         |                                      |             |  |  |
| University degree  | -0.123<br>(0.259)                                | 1.100<br>(2.142)           | -0.119<br>(0.247)               | 1.241<br>(2.036)          | -0.0582<br>(0.174)                   | 0.861<br>(1.323)                 | -0.0564<br>(0.168)          | 0.955<br>(1.306)           | 0.0282<br>(0.239)                                | 0.439<br>(2.069)         | 0.0273<br>(0.230)        | 0.487<br>(1.958)         |                                      |             |  |  |
| One bookcases      | -0.362<br>(0.270)                                | 0.296<br>(1.330)           | -0.367<br>(0.270)               | -0.0466<br>(1.430)        | -0.392*<br>(0.226)                   | 0.917<br>(0.924)                 | -0.398*<br>(0.219)          | 0.687<br>(0.924)           | -0.427<br>(0.371)                                | 2.179<br>(1.837)         | -0.433<br>(0.374)        | 1.989<br>(1.755)         |                                      |             |  |  |
| Two bookcases      | 0.0223<br>(0.0653)                               | 0.176<br>(1.011)           | 0.0245<br>(0.0691)              | 0.0247<br>(0.968)         | -0.0366<br>(0.0627)                  | -0.163<br>(0.681)                | -0.0401<br>(0.0669)         | -0.269<br>(0.689)          | -0.0882<br>(0.131)                               | -0.0908<br>(0.891)       | -0.0966<br>(0.0797)      | -0.362<br>(0.865)        |                                      |             |  |  |
| Home possess H     | 0.0636<br>(0.199)                                | -0.996<br>(4.517)          | 0.00603<br>(0.0392)             | 0.346<br>(4.423)          | 0.0726<br>(0.304)                    | -1.472<br>(2.808)                | 0.00688<br>(0.0620)         | -0.660<br>(3.053)          | 0.0657<br>(0.285)                                | -3.984<br>(3.118)        | 0.00622<br>(0.0597)      | -3.823<br>(3.344)        |                                      |             |  |  |
| Home possess M     | -0.198<br>(0.244)                                | 3.782<br>(5.402)           | -0.170<br>(0.195)               | 5.147<br>(5.561)          | -0.336<br>(0.245)                    | 0.539<br>(3.834)                 | -0.288**<br>(0.136)         | 1.555<br>(3.942)           | -0.307<br>(0.226)                                | 1.658<br>(4.330)         | -0.263*<br>(0.139)       | 3.057<br>(4.397)         |                                      |             |  |  |
| TL spoken ALs      | 0.0254<br>(0.227)                                | 0.794<br>(3.546)           | 0.0246<br>(0.217)               | 0.111<br>(3.055)          | 0.0221<br>(0.144)                    | -0.0464<br>(2.660)               | 0.0213<br>(0.139)           | -0.397<br>(2.513)          | 0.0882<br>(0.186)                                | -2.924<br>(2.797)        | 0.0853<br>(0.167)        | -3.052<br>(2.746)        |                                      |             |  |  |
| PC at H&SCL        | -0.625<br>(0.454)                                | 0.994<br>(1.116)           | -0.665**<br>(0.336)             | 0.883<br>(1.064)          | -0.472<br>(0.311)                    | 0.779<br>(0.869)                 | -0.502*<br>(0.275)          | 0.629<br>(0.842)           | -0.208<br>(0.385)                                | 0.112<br>(1.354)         | -0.221<br>(0.412)        | -0.0256<br>(1.386)       |                                      |             |  |  |
| PC at H/SCL        | -0.0322<br>(0.122)                               | 0.904<br>(2.691)           | -0.00995<br>(0.0276)            | 0.673<br>(2.633)          | -0.00995<br>(0.0810)                 | -0.717<br>(1.959)                | -0.00204<br>(0.0178)        | -0.840<br>(1.875)          | -0.0167<br>(0.122)                               | 2.628<br>(2.906)         | -0.00342<br>(0.0264)     | 2.613<br>(2.951)         |                                      |             |  |  |
| Male teacher       | 0.0802<br>(0.143)                                | 0.0628<br>(4.231)          | 0.0912<br>(0.158)               | -0.0652<br>(3.932)        | 0.0938<br>(0.196)                    | -0.584<br>(3.728)                | 0.107<br>(0.195)            | -0.417<br>(4.107)          | 0.152<br>(0.238)                                 | -0.242<br>(4.976)        | 0.173<br>(0.224)         | -0.244<br>(4.767)        |                                      |             |  |  |
| T. Experience      | -0.0199<br>(0.205)                               | 4.624<br>(10.03)           | -0.000167<br>(0.0707)           | 4.377<br>(10.59)          | -0.00730<br>(0.0559)                 | -3.601<br>(5.438)                | -6.15e-05<br>(0.0163)       | -2.246<br>(6.179)          | -0.0193<br>(0.0554)                              | 3.869<br>(6.896)         | -0.000162<br>(0.0184)    | 3.674<br>(6.669)         |                                      |             |  |  |
| T. Certificate!    | 0.0415<br>(0.0952)                               | -3.773<br>(5.624)          | 0.0316<br>(0.0478)              | -4.366<br>(5.459)         | 0.0333<br>(0.107)                    | -3.683<br>(3.584)                | 0.0254<br>(0.0477)          | -4.622<br>(3.588)          | 0.0484<br>(0.131)                                | -4.832<br>(4.502)        | 0.0369<br>(0.0577)       | -5.164<br>(4.902)        |                                      |             |  |  |
| M SCL RCS          | 0.00745<br>(0.126)                               | -0.460<br>(12.89)          | 0.00810<br>(0.103)              | 0.962<br>(13.00)          | 0.00645<br>(0.0528)                  | -1.865<br>(5.632)                | 0.00701<br>(0.0569)         | -2.155<br>(5.701)          | 0.0260<br>(0.0572)                               | -4.859<br>(9.017)        | 0.0283<br>(0.0644)       | -7.194<br>(9.050)        |                                      |             |  |  |
| L SCL RSC          | -0.00481<br>(0.0665)                             | 0.315<br>(1.618)           | -0.00674<br>(0.0956)            | 0.237<br>(1.511)          | 0.00412<br>(0.0407)                  | 0.524<br>(1.052)                 | 0.00577<br>(0.0714)         | 0.356<br>(1.103)           | 0.0421<br>(0.0543)                               | 0.843<br>(1.368)         | 0.0590<br>(0.0829)       | 0.228<br>(1.371)         |                                      |             |  |  |
| T. UNI Degree      | -0.0621<br>(0.0786)                              | 1.000<br>(1.495)           | -0.0719<br>(0.0549)             | 0.831<br>(1.246)          | -0.0337<br>(0.0719)                  | 0.418<br>(1.062)                 | -0.0390<br>(0.0731)         | 0.422<br>(1.070)           | 0.000757<br>(0.0560)                             | 0.453<br>(1.662)         | 0.000877<br>(0.0566)     | 0.491<br>(1.652)         |                                      |             |  |  |
| COMMU.>50000       | -0.0609<br>(0.0951)                              | -3.812<br>(3.697)          | -0.0698<br>(0.0784)             | -4.108<br>(3.963)         | -0.0369<br>(0.0781)                  | -1.965<br>(2.191)                | -0.0423<br>(0.0735)         | -2.073<br>(2.627)          | -0.0838<br>(0.125)                               | -1.588<br>(3.365)        | -0.0960<br>(0.0829)      | -2.490<br>(3.668)        |                                      |             |  |  |
| Pov 50% Disadv     | -0.0595<br>(0.148)                               | -3.405<br>(3.829)          | -0.0549<br>(0.0751)             | -3.678<br>(3.647)         | -0.00125<br>(0.0514)                 | 0.725<br>(2.897)                 | -0.00115<br>(0.0441)        | 0.280<br>(2.938)           | 0.0117<br>(0.0516)                               | 1.121<br>(3.432)         | 0.0108<br>(0.0440)       | 0.804<br>(3.549)         |                                      |             |  |  |
| Class size         | 1.108<br>(1.056)                                 | -26.38<br>(77.27)          | 1.041<br>(0.856)                | -37.25<br>(67.86)         | 1.129<br>(0.876)                     | -39.52<br>(63.51)                | 1.061<br>(0.765)            | -50.26<br>(61.34)          | 1.214<br>(1.210)                                 | -43.44<br>(61.99)        | 1.141<br>(0.925)         | -48.52<br>(63.05)        |                                      |             |  |  |
| Class size sq      | -0.322<br>(0.446)                                | 11.94<br>(47.29)           | -0.298<br>(0.353)               | 19.80<br>(43.73)          | -0.368<br>(0.364)                    | 25.07<br>(38.18)                 | -0.340<br>(0.345)           | 31.70<br>(36.89)           | -0.393<br>(0.664)                                | 18.61<br>(40.02)         | -0.364<br>(0.512)        | 21.07<br>(41.13)         |                                      |             |  |  |
| Constant           |  | 19.08<br>(47.58)           |                                 | 21.50<br>(43.96)          |                                      | 36.65<br>(34.31)                 |                             | 39.88<br>(34.12)           |  | 40.74<br>(29.48)         |                          | 47.96<br>(29.51)         |                                      |             |  |  |
| Total (Exp/Unexpl) | <b>-1.614*</b><br>(0.908)                        | <b>8.151***</b><br>(3.162) | <b>-1.258**</b><br>(0.616)      | <b>7.855**</b><br>(3.169) | <b>-1.483**</b><br>(0.693)           | <b>8.136***</b><br>(2.367)       | <b>-1.523***</b><br>(0.477) | <b>7.894***</b><br>(2.442) | <b>-0.873</b><br>(0.994)                         | <b>5.685*</b><br>(3.100) | <b>-1.128</b><br>(0.782) | <b>5.703*</b><br>(3.140) |                                      |             |  |  |
| Raw Gap            | Boys<br>314.0<br>(3.323)                         | Girls<br>307.5<br>(3.221)  | Total Gap<br>6.537**<br>(3.156) | Boys<br>389.6<br>(2.819)  | Girls<br>382.9<br>(2.819)            | Total Gap<br>6.653***<br>(2.396) | Boys<br>466.7<br>(2.454)    | Girls<br>461.9<br>(2.582)  | Total Gap<br>4.812*<br>(2.849)                   |                          |                          |                          |                                      |             |  |  |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1 (parents nationality not included in Algeria, Native parents) Dummy controls for missing observations included.

Table B. 10: Syria detailed decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |                           |                               |                          | F(x) for girls Reweighted to Boys |                                  |                          |                           | Without reweighting<br>Girls are reference group |                    |                      |                    | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|---------------------------|-------------------------------|--------------------------|-----------------------------------|----------------------------------|--------------------------|---------------------------|--|--------------------|----------------------|--------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |                           | 50th quantile                 |                          | 90th quantile                     |                                  | 10th quantile            |                           | 50th quantile                                    |                    | 90th quantile        |                    | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained               | Explained                     | Unexplained              | Explained                         | Unexplained                      | Explained                | Unexplained               | Explained  | Unexplained        | Explained            | Unexplained        | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.0661<br>(0.221)                                | 1.789<br>(4.302)          | 0.0717<br>(0.188)             | 3.415<br>(5.763)         | -0.0108<br>(0.138)                | 0.792<br>(3.165)                 | -0.0117<br>(0.147)       | 3.019<br>(3.309)          | 0.0177<br>(0.176)                                | 1.915<br>(3.869)   | 0.0193<br>(0.178)    | 3.028<br>(4.215)   |                                   |             |               |             |               |             |
| Upper-sec           | 0.322<br>(0.423)                                 | 3.207<br>(2.772)          | 0.157<br>(0.213)              | 5.330<br>(5.702)         | 0.282<br>(0.398)                  | 0.515<br>(2.491)                 | 0.137<br>(0.200)         | 2.121<br>(3.055)          | 0.542<br>(0.549)                                 | 1.510<br>(2.806)   | 0.263<br>(0.271)     | 2.621<br>(3.523)   |                                   |             |               |             |               |             |
| Post-sec not UNI    | 0.0446<br>(0.243)                                | 5.405<br>(4.603)          | 0.0171<br>(0.0961)            | 8.877<br>(6.997)         | 0.276<br>(0.293)                  | 1.767<br>(3.484)                 | 0.106<br>(0.173)         | 3.333<br>(3.998)          | 0.236<br>(0.329)                                 | 3.307<br>(3.855)   | 0.0908<br>(0.185)    | 4.899<br>(4.591)   |                                   |             |               |             |               |             |
| University degree   | 0.00146<br>(0.294)                               | 0.925<br>(2.408)          | -0.0103<br>(0.169)            | 1.407<br>(3.106)         | 0.00349<br>(0.392)                | -0.445<br>(1.956)                | -0.0247<br>(0.243)       | 0.136<br>(2.551)          | 0.00330<br>(0.338)                               | 0.0461<br>(2.399)  | -0.0233<br>(0.211)   | 0.341<br>(2.919)   |                                   |             |               |             |               |             |
| Native parents      | -1.084<br>(0.773)                                | 7.575<br>(13.56)          | -1.073<br>(0.727)             | 12.60<br>(20.43)         | -0.335<br>(0.479)                 | 14.90*<br>(8.691)                | -0.332<br>(0.477)        | 12.41<br>(10.36)          | -0.309<br>(0.426)                                | 5.539<br>(10.36)   | -0.306<br>(0.410)    | 3.757<br>(8.876)   |                                   |             |               |             |               |             |
| One bookcases       | -0.119<br>(0.136)                                | -0.784<br>(2.224)         | -0.209<br>(0.145)             | -0.280<br>(3.309)        | -0.0768<br>(0.193)                | -0.105<br>(2.010)                | -0.134<br>(0.181)        | 0.357<br>(2.252)          | -0.0858<br>(0.125)                               | -0.616<br>(3.167)  | -0.150<br>(0.202)    | 1.422<br>(3.193)   |                                   |             |               |             |               |             |
| Two bookcases       | 0.0596<br>(0.138)                                | 0.434<br>(1.847)          | 0.143<br>(0.151)              | 0.569<br>(2.603)         | 0.00515<br>(0.0549)               | 0.323<br>(1.252)                 | 0.0123<br>(0.118)        | 0.971<br>(1.474)          | -0.0769<br>(0.139)                               | 0.297<br>(2.214)   | -0.184<br>(0.149)    | 0.737<br>(2.474)   |                                   |             |               |             |               |             |
| Home possess H      | -1.322<br>(0.900)                                | 4.933<br>(5.238)          | -1.804**<br>(0.754)           | 6.860<br>(7.403)         | -2.041<br>(1.507)                 | 0.179<br>(4.782)                 | -2.785***<br>(0.945)     | -0.941<br>(5.462)         | -1.587<br>(1.274)                                | -0.0617<br>(6.476) | -2.165**<br>(0.977)  | -4.951<br>(7.632)  |                                   |             |               |             |               |             |
| Home possess M      | 0.362<br>(0.316)                                 | 6.889<br>(8.415)          | 0.579*<br>(0.314)             | 8.298<br>(11.01)         | 0.418<br>(0.628)                  | 2.399<br>(6.986)                 | 0.669*<br>(0.401)        | -0.0967<br>(8.515)        | 0.292<br>(0.348)                                 | -0.0279<br>(7.922) | 0.467*<br>(0.256)    | -2.833<br>(7.444)  |                                   |             |               |             |               |             |
| TL spoken ALs       | 0.266<br>(0.469)                                 | 6.451<br>(13.99)          | 0.317<br>(0.462)              | 3.473<br>(17.48)         | -0.129<br>(0.246)                 | 3.678<br>(6.386)                 | -0.154<br>(0.308)        | 0.742<br>(7.969)          | -0.0181<br>(0.420)                               | -0.765<br>(9.427)  | -0.0215<br>(0.507)   | -1.525<br>(9.071)  |                                   |             |               |             |               |             |
| PC at H&SCL         | 0.201<br>(0.655)                                 | -1.882<br>(5.703)         | 0.271<br>(0.456)              | -3.361<br>(7.793)        | 0.236<br>(0.520)                  | -2.452<br>(4.915)                | 0.318<br>(0.326)         | -3.683<br>(5.431)         | 0.0893<br>(0.358)                                | -1.192<br>(5.528)  | 0.120<br>(0.373)     | -0.470<br>(5.645)  |                                   |             |               |             |               |             |
| PC at H/SCL         | 0.441<br>(0.723)                                 | -6.140<br>(6.073)         | 0.296<br>(0.489)              | -11.17*<br>(6.733)       | 0.413<br>(0.429)                  | -6.362<br>(4.641)                | 0.277<br>(0.297)         | -7.250<br>(4.814)         | 0.259<br>(0.626)                                 | -1.453<br>(6.856)  | 0.174<br>(0.416)     | -0.404<br>(7.300)  |                                   |             |               |             |               |             |
| Male teacher        | -3.192<br>(2.102)                                | 10.13<br>(8.587)          | -3.483<br>(2.219)             | 8.074<br>(9.386)         | -1.443<br>(1.876)                 | 8.025<br>(7.698)                 | -1.575<br>(2.070)        | 5.919<br>(7.625)          | 0.411<br>(2.752)                                 | 7.630<br>(8.347)   | 0.448<br>(2.964)     | 7.195<br>(7.072)   |                                   |             |               |             |               |             |
| T. Experience       | -0.920<br>(0.953)                                | -11.83<br>(12.40)         | -1.362<br>(1.302)             | -9.098<br>(16.01)        | -1.032<br>(1.963)                 | -9.693<br>(11.96)                | -1.528<br>(1.377)        | -5.918<br>(13.98)         | -0.790<br>(1.240)                                | -11.92<br>(9.906)  | -1.170<br>(1.272)    | -9.659<br>(10.22)  |                                   |             |               |             |               |             |
| T. Certificate!     | 0.212<br>(0.420)                                 | -1.685<br>(16.11)         | -0.0571<br>(0.109)            | -7.266<br>(19.07)        | 0.110<br>(0.476)                  | -8.371<br>(14.48)                | -0.0296<br>(0.143)       | -7.279<br>(15.04)         | 0.0207<br>(0.257)                                | -0.897<br>(15.02)  | -0.00558<br>(0.0800) | 0.630<br>(16.59)   |                                   |             |               |             |               |             |
| M SCL RCS           | -0.00520<br>(1.103)                              | -6.758<br>(25.82)         | 0.00582<br>(1.009)            | -12.38<br>(28.05)        | 0.0864<br>(0.725)                 | -7.978<br>(22.95)                | -0.0967<br>(0.690)       | -20.10<br>(28.41)         | 0.163<br>(1.190)                                 | -21.73<br>(20.25)  | -0.182<br>(1.048)    | -35.48<br>(22.35)  |                                   |             |               |             |               |             |
| L SCL RSC           | 1.376<br>(3.561)                                 | -3.902<br>(6.090)         | 1.759<br>(3.361)              | -3.387<br>(8.197)        | 2.443<br>(3.065)                  | -1.981<br>(4.266)                | 3.124<br>(3.143)         | -2.298<br>(5.797)         | 2.389<br>(2.520)                                 | -3.138<br>(3.471)  | 3.055<br>(3.159)     | -4.144<br>(3.530)  |                                   |             |               |             |               |             |
| T. UNI Degree       | 0.796<br>(1.261)                                 | 4.572<br>(9.314)          | 1.080<br>(1.467)              | 3.553<br>(9.826)         | 0.465<br>(0.880)                  | 2.960<br>(6.400)                 | 0.631<br>(0.996)         | 3.023<br>(7.286)          | -0.0940<br>(0.968)                               | 1.862<br>(7.519)   | -0.128<br>(1.276)    | 0.916<br>(7.287)   |                                   |             |               |             |               |             |
| COMMU.>50000        | -0.623<br>(0.988)                                | 1.881<br>(7.693)          | -1.054<br>(1.317)             | 0.350<br>(9.180)         | 0.465<br>(0.917)                  | 1.438<br>(5.211)                 | 0.787<br>(1.067)         | 2.006<br>(6.146)          | 1.250<br>(1.559)                                 | 3.537<br>(6.506)   | 2.116<br>(1.452)     | 5.750<br>(7.191)   |                                   |             |               |             |               |             |
| Pov 50% Disadv      | -0.881<br>(1.501)                                | -11.76<br>(9.122)         | -0.994<br>(1.532)             | -6.772<br>(14.01)        | -1.042<br>(1.200)                 | -14.83*<br>(8.288)               | -1.176<br>(1.333)        | -9.405<br>(10.41)         | -1.835<br>(1.575)                                | -12.23<br>(7.818)  | -2.070<br>(1.604)    | -6.366<br>(9.062)  |                                   |             |               |             |               |             |
| Class size          | 4.104<br>(9.692)                                 | -21.80<br>(199.3)         | 6.848<br>(14.26)              | 20.80<br>(205.3)         | 6.288<br>(13.51)                  | 53.47<br>(225.9)                 | 10.49<br>(17.12)         | 104.8<br>(232.2)          | 8.530<br>(14.55)                                 | 128.9<br>(247.1)   | 14.23<br>(19.40)     | 165.7<br>(239.3)   |                                   |             |               |             |               |             |
| Class size sq       | -2.006<br>(6.567)                                | 9.545<br>(113.5)          | -4.249<br>(13.88)             | -18.66<br>(115.8)        | -3.809<br>(9.737)                 | -28.55<br>(125.2)                | -8.067<br>(16.48)        | -66.26<br>(129.8)         | -6.204<br>(10.78)                                | -87.41<br>(139.6)  | -13.14<br>(18.72)    | -119.7<br>(143.1)  |                                   |             |               |             |               |             |
| Constant            | 16.05<br>(107.9)                                 | 0.0809<br>(130.9)         | 11.09<br>(128.1)              | 4.61<br>(134.6)          | 4.61<br>(134.6)                   | 4.61<br>(134.6)                  | 4.61<br>(134.6)          | 4.61<br>(134.6)           | 4.61<br>(134.6)                                  | 4.61<br>(134.6)    | 4.61<br>(134.6)      | 4.61<br>(134.6)    |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | -3.606<br>(6.640)                                | 14.27<br>(9.915)          | -5.520<br>(5.213)             | 15.12<br>(11.09)         | 0.178<br>(6.259)                  | 20.55***<br>(7.899)              | -2.137<br>(3.626)        | 19.81**<br>(8.889)        | 2.005<br>(5.068)                                 | 16.22**<br>(6.571) | -0.0703<br>(3.303)   | 15.63**<br>(6.570) |                                   |             |               |             |               |             |
| Raw Gap             | Boys<br>296.6<br>(6.700)                         | Girls<br>285.9<br>(6.494) | Total Gap<br>10.67<br>(7.993) | Boys<br>405.7<br>(5.767) | Girls<br>385.0<br>(4.977)         | Total Gap<br>20.73***<br>(6.812) | Boys<br>510.8<br>(5.520) | Girls<br>492.6<br>(5.169) | Total Gap<br>18.22***<br>(5.975)                 |                    |                      |                    |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 11: Tunisia detailed decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |                           |                                  |                          | F(x) for girls Reweighted to Boys |                                  |                          |                           | Without reweighting<br>Girls are reference group |                     |                       |                     | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|---------------------------|----------------------------------|--------------------------|-----------------------------------|----------------------------------|--------------------------|---------------------------|--|---------------------|-----------------------|---------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |                           | 50th quantile                    |                          | 90th quantile                     |                                  | 10th quantile            |                           | 50th quantile                                    |                     | 90th quantile         |                     | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained               | Explained                        | Unexplained              | Explained                         | Unexplained                      | Explained                | Unexplained               | Explained  | Unexplained         | Explained             | Unexplained         | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.357<br>(0.406)                                 | 1.706<br>(4.185)          | 0.343<br>(0.359)                 | 1.553<br>(4.039)         | 0.366<br>(0.303)                  | 1.576<br>(2.793)                 | 0.352<br>(0.254)         | 1.620<br>(2.902)          | 0.447<br>(0.480)                                 | 0.0712<br>(3.787)   | 0.430<br>(0.332)      | -0.0238<br>(3.646)  |                                   |             |               |             |               |             |
| Upper-sec           | 0.0946<br>(0.188)                                | 1.208<br>(3.884)          | 0.0892<br>(0.137)                | 1.336<br>(3.834)         | 0.129<br>(0.155)                  | 2.641<br>(3.513)                 | 0.121<br>(0.120)         | 2.816<br>(3.472)          | 0.252<br>(0.399)                                 | 3.222<br>(4.141)    | 0.237<br>(0.169)      | 3.088<br>(4.017)    |                                   |             |               |             |               |             |
| Post-sec not UNI    | 0.00897<br>(0.0777)                              | -0.167<br>(3.437)         | 0.00768<br>(0.0409)              | -0.516<br>(3.434)        | 0.0212<br>(0.0775)                | -0.883<br>(2.028)                | 0.0181<br>(0.0294)       | -0.500<br>(2.030)         | 0.0142<br>(0.163)                                | -1.382<br>(3.112)   | 0.0122<br>(0.0685)    | -1.269<br>(3.026)   |                                   |             |               |             |               |             |
| University degree   | 0.0813<br>(0.241)                                | 0.448<br>(3.913)          | 0.0751<br>(0.207)                | 0.268<br>(3.917)         | 0.118<br>(0.190)                  | 0.0768<br>(1.540)                | 0.109<br>(0.137)         | 0.0463<br>(1.508)         | 0.405<br>(0.400)                                 | 0.358<br>(4.741)    | 0.374<br>(0.359)      | 0.713<br>(4.529)    |                                   |             |               |             |               |             |
| Native parents      | -0.497<br>(0.504)                                | 17.38<br>(17.65)          | -0.492<br>(0.388)                | 17.02<br>(17.37)         | -0.398<br>(0.382)                 | 14.87<br>(10.22)                 | -0.394<br>(0.314)        | 13.62<br>(10.09)          | -0.603<br>(0.387)                                | 14.87<br>(10.77)    | -0.598**<br>(0.286)   | -2.908<br>(11.46)   |                                   |             |               |             |               |             |
| One bookcases       | -0.193<br>(0.223)                                | 0.405<br>(1.777)          | -0.183<br>(0.170)                | 0.457<br>(1.787)         | -0.375<br>(0.237)                 | 0.540<br>(2.561)                 | -0.355**<br>(0.149)      | 0.348<br>(2.595)          | -0.500<br>(0.317)                                | 2.371<br>(2.619)    | -0.474***<br>(0.161)  | 1.908<br>(2.645)    |                                   |             |               |             |               |             |
| Two bookcases       | 0.106<br>(0.147)                                 | -0.667<br>(0.921)         | 0.102<br>(0.0910)                | -0.635<br>(0.962)        | 0.287<br>(0.269)                  | -0.237<br>(1.211)                | 0.276***<br>(0.0864)     | -0.397<br>(1.251)         | 0.870<br>(0.797)                                 | -2.694<br>(1.820)   | 0.839***<br>(0.221)   | -2.706<br>(1.816)   |                                   |             |               |             |               |             |
| Home possess H      | 0.939<br>(0.694)                                 | -4.998<br>(7.414)         | 0.983***<br>(0.356)              | -6.464<br>(8.832)        | 1.064<br>(0.803)                  | -4.847<br>(4.286)                | 1.114***<br>(0.279)      | -5.215<br>(4.488)         | 0.868<br>(0.706)                                 | -4.856<br>(4.557)   | 0.909***<br>(0.293)   | -4.742<br>(4.581)   |                                   |             |               |             |               |             |
| Home possess M      | -0.735<br>(0.626)                                | -8.357<br>(7.692)         | -0.764*<br>(0.414)               | -9.850<br>(8.281)        | -0.844*<br>(0.474)                | -6.240<br>(4.722)                | -0.877***<br>(0.306)     | -6.254<br>(4.733)         | -0.548<br>(0.387)                                | -5.111<br>(3.438)   | -0.570***<br>(0.196)  | -4.915<br>(3.348)   |                                   |             |               |             |               |             |
| TL spoken ALs       | -0.128<br>(0.189)                                | -0.628<br>(1.375)         | -0.125<br>(0.150)                | -0.459<br>(1.421)        | -0.188<br>(0.195)                 | 0.144<br>(1.100)                 | -0.183*<br>(0.102)       | 0.118<br>(1.059)          | -0.262<br>(0.208)                                | -0.0368<br>(0.817)  | -0.255***<br>(0.0898) | 0.00801<br>(0.788)  |                                   |             |               |             |               |             |
| PC at H&SCL         | -0.366<br>(0.253)                                | 0.290<br>(1.148)          | -0.389<br>(0.239)                | 0.307<br>(1.130)         | -0.270*<br>(0.161)                | -0.344<br>(0.803)                | -0.287*<br>(0.158)       | -0.330<br>(0.813)         | 0.414<br>(0.171)                                 | -0.245*<br>(0.582)  | -0.245*<br>(0.127)    | 0.469<br>(0.574)    |                                   |             |               |             |               |             |
| PC at H/SCL         | -0.361<br>(0.391)                                | -1.258<br>(7.417)         | -0.359<br>(0.252)                | -0.735<br>(7.202)        | -0.193<br>(0.280)                 | -2.052<br>(3.520)                | -0.192<br>(0.163)        | -1.893<br>(3.551)         | 3.012<br>(0.205)                                 | -0.239<br>(3.389)   | 3.060<br>(0.150)      | 3.060<br>(3.785)    |                                   |             |               |             |               |             |
| Male teacher        | 0.00475<br>(0.134)                               | 2.002<br>(4.862)          | 0.00611<br>(0.0382)              | 1.367<br>(4.954)         | 0.00471<br>(0.204)                | 1.073<br>(4.512)                 | 0.00607<br>(0.0582)      | 0.426<br>(4.478)          | 0.00339<br>(0.0806)                              | 3.448<br>(5.868)    | 0.00437<br>(0.0243)   | 3.722<br>(5.987)    |                                   |             |               |             |               |             |
| T. Experience       | -0.159<br>(0.247)                                | -1.813<br>(9.202)         | -0.148<br>(0.188)                | -2.534<br>(9.509)        | -0.212<br>(0.294)                 | -1.208<br>(3.667)                | -0.197*<br>(0.115)       | -1.004<br>(3.374)         | -0.0610<br>(0.248)                               | 4.398<br>(6.898)    | -0.0569<br>(0.165)    | 5.983<br>(6.710)    |                                   |             |               |             |               |             |
| T. Certificate!     | -0.0505<br>(0.0823)                              | -5.183<br>(6.822)         | -0.0411<br>(0.0390)              | -6.440<br>(7.689)        | -0.0192<br>(0.0458)               | 1.010<br>(10.02)                 | -0.0156<br>(0.0454)      | 0.537<br>(9.714)          | 0.0161<br>(0.100)                                | -2.503<br>(12.30)   | 0.0131<br>(0.0632)    | -1.069<br>(12.34)   |                                   |             |               |             |               |             |
| M SCL RCS           | -0.00983<br>(0.110)                              | 5.663<br>(8.457)          | -0.00484<br>(0.0459)             | 6.493<br>(9.019)         | -0.00787<br>(0.0512)              | -0.469<br>(11.32)                | -0.00388<br>(0.0190)     | 0.284<br>(11.23)          | 0.0124<br>(0.180)                                | -0.981<br>(13.03)   | 0.00610<br>(0.0706)   | -0.891<br>(12.66)   |                                   |             |               |             |               |             |
| L SCL RSC           | 0.0599<br>(0.173)                                | -0.0420<br>(3.328)        | 0.0473<br>(0.113)                | -0.00500<br>(3.564)      | -0.000736<br>(0.134)              | -1.575<br>(3.347)                | -0.000580<br>(0.108)     | -1.579<br>(3.297)         | -0.0361<br>(0.215)                               | 1.509<br>(3.986)    | -0.0284<br>(0.151)    | 1.098<br>(3.915)    |                                   |             |               |             |               |             |
| T. UNI Degree       | 0.0978<br>(0.127)                                | 19.15<br>(18.84)          | 0.0935<br>(0.0656)               | 17.93<br>(18.57)         | 0.0273<br>(0.0939)                | -3.000<br>(22.86)                | 0.0261<br>(0.0795)       | -0.0574<br>(23.22)        | -0.0574<br>(0.149)                               | -16.00<br>(39.04)   | -0.0549<br>(0.142)    | -11.16<br>(38.93)   |                                   |             |               |             |               |             |
| COMMU.>50000        | 0.00520<br>(0.110)                               | 0.291<br>(2.048)          | 0.00414<br>(0.0789)              | 0.695<br>(2.342)         | 0.0131<br>(0.0711)                | -0.265<br>(1.687)                | 0.0104<br>(0.0526)       | -0.225<br>(1.602)         | -0.0309<br>(0.121)                               | 1.204<br>(2.819)    | -0.0246<br>(0.0678)   | 0.911<br>(2.839)    |                                   |             |               |             |               |             |
| Pov 50% Disadv      | -0.0487<br>(0.153)                               | -2.425<br>(5.328)         | -0.0456<br>(0.0608)              | -2.464<br>(5.672)        | -0.0654<br>(0.146)                | -2.163<br>(4.494)                | -0.0612<br>(0.0616)      | -1.866<br>(4.529)         | -0.0698<br>(0.114)                               | 5.167<br>(5.632)    | -0.0654<br>(0.0597)   | 5.588<br>(5.523)    |                                   |             |               |             |               |             |
| Class size          | 0.269<br>(0.807)                                 | -115.7***<br>(52.05)      | 0.290<br>(0.619)                 | -146.4**<br>(70.56)      | 0.651<br>(1.484)                  | -52.13<br>(116.1)                | 0.700<br>(0.523)         | -57.32<br>(113.1)         | 0.983<br>(1.344)                                 | 24.11<br>(89.41)    | 1.057<br>(0.658)      | 28.11<br>(79.72)    |                                   |             |               |             |               |             |
| Class size sq       | -0.654<br>(0.980)                                | 61.95*<br>(32.40)         | -0.718<br>(0.786)                | 80.04*<br>(42.51)        | -1.173<br>(1.429)                 | 29.27<br>(64.47)                 | -1.287**<br>(0.656)      | 33.09<br>(63.62)          | -1.490<br>(1.349)                                | -8.042<br>(47.32)   | -1.635*<br>(0.837)    | -7.546<br>(43.12)   |                                   |             |               |             |               |             |
| Constant            | 64.47*<br>(38.90)                                | 85.34*<br>(50.54)         | 85.34*<br>(50.54)                | 85.34*<br>(50.54)        | 49.21<br>(61.00)                  | 47.7<br>(58.91)                  | 47.7<br>(58.91)          | 47.7<br>(58.91)           | 7.250<br>(72.07)                                 | -4.287<br>(69.51)   | -4.287<br>(69.51)     |                     |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | -2.214*<br>(1.257)                               | 25.67***<br>(4.212)       | -1.383**<br>(0.601)              | 26.06***<br>(4.465)      | -1.665<br>(1.452)                 | 24.18***<br>(3.727)              | -1.193**<br>(0.570)      | 24.21***<br>(3.640)       | -0.680<br>(1.779)                                | 16.06***<br>(4.322) | -0.207<br>(0.782)     | 16.52***<br>(4.259) |                                   |             |               |             |               |             |
| Raw Gap             | Boys<br>349.5<br>(4.498)                         | Girls<br>326.1<br>(3.338) | Total Gap<br>23.46***<br>(4.150) | Boys<br>429.7<br>(3.169) | Girls<br>407.1<br>(3.189)         | Total Gap<br>22.52***<br>(3.833) | Boys<br>515.3<br>(4.277) | Girls<br>499.9<br>(3.814) | Total Gap<br>15.38***<br>(4.808)                 |                     |                       |                     |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 12: Turkey detailed decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |   |  |  | F(x) for girls Reweighted to Boys  |   |  |  | Without reweighting<br>Girls are reference group |   |  |  | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|---|--|--|------------------------------------|---|--|--|--|---|--|--|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |   | 50th quantile                              |  | 90th quantile                      |   | 10th quantile                              |  | 50th quantile                                    |   | 90th quantile                              |  | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained                               | Explained                                  | Unexplained                                  | Explained                          | Unexplained                               | Explained                                  | Unexplained                                  | Explained  | Unexplained                               | Explained                                  | Unexplained                                  | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.0349<br>(0.172)                                | 1.626<br>(9.653)                          | 0.0265<br>(0.128)                          | 6.357<br>(11.73)                             | -0.307<br>(0.247)                  | -7.242<br>(7.612)                         | -0.233*<br>(0.131)                         | -7.517<br>(9.241)                            | -0.229<br>(0.232)                                | -2.051<br>(5.323)                         | -0.174<br>(0.119)                          | -2.877<br>(5.752)                            |                                   |             |               |             |               |             |
| Upper-sec           | -0.394<br>(0.443)                                | 0.654<br>(4.297)                          | -0.380<br>(0.357)                          | 2.960<br>(5.017)                             | -1.186*<br>(0.608)                 | -0.125<br>(3.389)                         | -1.143***<br>(0.396)                       | -0.633<br>(4.000)                            | -0.812<br>(0.540)                                | -0.779<br>(3.471)                         | -0.783*<br>(0.414)                         | -1.953<br>(3.484)                            |                                   |             |               |             |               |             |
| Post-sec not UNI    | 0.0228<br>(0.186)                                | -0.258<br>(0.864)                         | 0.0208<br>(0.0497)                         | 0.151<br>(0.899)                             | 0.0501<br>(0.212)                  | 0.0733<br>(1.036)                         | 0.0457<br>(0.0603)                         | -0.118<br>(0.943)                            | 0.0945<br>(0.591)                                | -2.258<br>(1.792)                         | 0.0862<br>(0.154)                          | -2.314<br>(1.861)                            |                                   |             |               |             |               |             |
| University degree   | -0.0779<br>(0.228)                               | -1.141<br>(1.638)                         | -0.0697<br>(0.0846)                        | -0.186<br>(1.788)                            | -0.334<br>(0.534)                  | -1.348<br>(1.403)                         | -0.299*<br>(0.178)                         | -1.241<br>(1.483)                            | -0.869<br>(1.380)                                | 0.121<br>(3.671)                          | -0.778*<br>(0.442)                         | -0.417<br>(3.844)                            |                                   |             |               |             |               |             |
| Native parents      | -0.416<br>(0.383)                                | 46.61<br>(42.32)                          | -0.447<br>(0.410)                          | 47.99<br>(44.36)                             | -0.116<br>(0.242)                  | 44.00<br>(29.89)                          | -0.124<br>(0.186)                          | 35.54<br>(34.51)                             | -0.131<br>(0.219)                                | 9.109<br>(26.17)                          | -0.141<br>(0.200)                          | 8.939<br>(27.84)                             |                                   |             |               |             |               |             |
| One bookcases       | -0.367<br>(0.292)                                | 0.239<br>(2.841)                          | -0.405<br>(0.298)                          | 0.0205<br>(2.818)                            | -0.927*<br>(0.524)                 | 0.213<br>(2.301)                          | -1.024***<br>(0.351)                       | 0.911<br>(2.281)                             | -0.656<br>(0.420)                                | 4.358<br>(3.279)                          | -0.725*<br>(0.429)                         | 4.481<br>(3.667)                             |                                   |             |               |             |               |             |
| Two bookcases       | -0.170<br>(0.591)                                | 1.226<br>(1.860)                          | -0.166<br>(0.577)                          | 1.076<br>(2.046)                             | -1.053<br>(0.703)                  | 1.376<br>(1.682)                          | -1.030*<br>(0.619)                         | 1.625<br>(1.511)                             | -1.375<br>(1.041)                                | 4.933*<br>(2.868)                         | -1.345<br>(0.992)                          | 3.464<br>(3.424)                             |                                   |             |               |             |               |             |
| Home possess H      | 1.320<br>(1.481)                                 | -10.76<br>(11.40)                         | 1.440*<br>(0.739)                          | -10.39<br>(12.38)                            | 1.033<br>(0.934)                   | -5.508<br>(6.921)                         | 1.127**<br>(0.441)                         | -5.173<br>(6.667)                            | 0.339<br>(0.454)                                 | -6.387<br>(8.138)                         | 0.370<br>(0.425)                           | -1.769<br>(9.057)                            |                                   |             |               |             |               |             |
| Home possess M      | -1.646<br>(1.581)                                | -18.41<br>(17.04)                         | -1.648*<br>(0.895)                         | -15.79<br>(17.77)                            | -0.721<br>(0.587)                  | -0.839<br>(8.090)                         | -0.721*<br>(0.398)                         | -0.236<br>(7.592)                            | 0.322<br>(0.316)                                 | 4.523<br>(6.163)                          | 0.293<br>(0.290)                           | 7.966<br>(6.835)                             |                                   |             |               |             |               |             |
| TL spoken ALs       | -3.807***<br>(1.434)                             | -22.76<br>(14.45)                         | -3.630***<br>(1.131)                       | -16.60<br>(16.13)                            | -2.940***<br>(0.929)               | -2.792<br>(8.895)                         | -2.803***<br>(0.715)                       | -3.388<br>(9.553)                            | -1.839**<br>(0.857)                              | -15.79<br>(11.48)                         | -1.754**<br>(0.705)                        | -17.16<br>(13.27)                            |                                   |             |               |             |               |             |
| PC at H&SCL         | -0.00572<br>(0.682)                              | -4.363<br>(8.178)                         | -0.192<br>(0.261)                          | -3.476<br>(8.198)                            | -0.00664<br>(0.549)                | -2.299<br>(4.917)                         | 0.223<br>(0.201)                           | -1.401<br>(4.986)                            | -0.00291<br>(0.298)                              | 12.01*<br>(6.289)                         | -0.0979<br>(0.144)                         | 9.263<br>(5.908)                             |                                   |             |               |             |               |             |
| PC at H/SCL         | -1.332<br>(1.580)                                | -7.699<br>(13.38)                         | -1.319<br>(1.529)                          | -5.855<br>(13.24)                            | -1.004<br>(0.683)                  | -2.708<br>(7.661)                         | -0.994*<br>(0.598)                         | -0.314<br>(7.911)                            | 0.388<br>(0.720)                                 | 10.26<br>(7.506)                          | 0.384<br>(0.764)                           | 6.681<br>(7.190)                             |                                   |             |               |             |               |             |
| Male teacher        | -0.306<br>(0.427)                                | -0.338<br>(9.385)                         | -0.309<br>(0.346)                          | 1.253<br>(9.439)                             | -0.238<br>(0.343)                  | 0.377<br>(6.014)                          | -0.240<br>(0.256)                          | 0.945<br>(5.748)                             | -0.0582<br>(0.314)                               | -10.47<br>(10.14)                         | -0.0586<br>(0.295)                         | -11.73<br>(9.843)                            |                                   |             |               |             |               |             |
| T. Experience       | -0.0464<br>(0.456)                               | -0.334<br>(18.83)                         | -0.0311<br>(0.283)                         | 1.013<br>(21.62)                             | -0.280<br>(0.477)                  | -3.734<br>(11.20)                         | -0.188<br>(0.252)                          | -4.509<br>(11.47)                            | -0.337<br>(0.461)                                | -5.234<br>(15.25)                         | -0.226<br>(0.248)                          | -4.537<br>(14.29)                            |                                   |             |               |             |               |             |
| T. Certificate!     | -0.0787<br>(0.0724)                              | -74.63<br>(84.58)                         | -0.0322<br>(0.0297)                        | -65.59<br>(101.3)                            | -0.0521<br>(0.0909)                | -16.60<br>(68.10)                         | -0.0213<br>(0.0371)                        | -8.218<br>(62.23)                            | -0.0382<br>(0.0367)                              | -0.0529<br>(23.29)                        | -0.0156<br>(0.0149)                        | -4.512<br>(23.94)                            |                                   |             |               |             |               |             |
| M SCL RCS           | 0.0211<br>(0.238)                                | 3.635<br>(11.23)                          | 0.125<br>(0.150)                           | 1.318<br>(12.73)                             | 0.0269<br>(0.604)                  | -7.405<br>(13.88)                         | 0.159<br>(0.292)                           | -9.882<br>(15.36)                            | 0.0111<br>(0.382)                                | 6.788<br>(28.56)                          | 0.0657<br>(0.263)                          | 6.291<br>(25.28)                             |                                   |             |               |             |               |             |
| L SCL RSC           | -0.270<br>(0.419)                                | 0.581<br>(6.525)                          | -0.346<br>(0.303)                          | -1.270<br>(7.600)                            | -0.270<br>(0.609)                  | -1.994<br>(4.782)                         | -0.347<br>(0.347)                          | -3.198<br>(5.135)                            | -0.124<br>(0.471)                                | 6.114<br>(10.71)                          | -0.160<br>(0.408)                          | 6.851<br>(9.888)                             |                                   |             |               |             |               |             |
| T. UNI Degree       | -0.0551<br>(0.805)                               | 7.209<br>(25.40)                          | -0.0458<br>(0.636)                         | 7.352<br>(29.88)                             | 0.492<br>(0.556)                   | -9.203<br>(15.15)                         | 0.410<br>(0.436)                           | -8.110<br>(15.10)                            | 0.341<br>(0.597)                                 | -27.95<br>(25.16)                         | 0.284<br>(0.474)                           | -24.46<br>(23.78)                            |                                   |             |               |             |               |             |
| COMMU.>50000        | -0.00194<br>(0.0760)                             | 14.35<br>(12.00)                          | 0.00153<br>(0.0281)                        | 11.41<br>(13.06)                             | -0.00254<br>(0.147)                | 4.754<br>(6.993)                          | 0.00201<br>(0.0584)                        | 4.600<br>(8.216)                             | -0.0107<br>(0.444)                               | -0.857<br>(10.60)                         | 0.00844<br>(0.178)                         | -0.234<br>(10.95)                            |                                   |             |               |             |               |             |
| Pov 50% Disadv      | -0.451<br>(0.462)                                | 1.697<br>(9.824)                          | -0.378<br>(0.363)                          | 2.254<br>(10.83)                             | -0.961*<br>(0.578)                 | 3.645<br>(8.105)                          | -0.806**<br>(0.373)                        | 1.588<br>(8.243)                             | -1.413*<br>(0.765)                               | -9.290<br>(12.68)                         | -1.185**<br>(0.493)                        | -10.65<br>(12.53)                            |                                   |             |               |             |               |             |
| Class size          | -0.728<br>(1.224)                                | -88.07<br>(87.49)                         | -0.867<br>(1.212)                          | -76.14<br>(92.88)                            | -0.682<br>(1.120)                  | 7.527<br>(85.36)                          | -0.813<br>(0.983)                          | 26.33<br>(74.12)                             | 1.165<br>(1.264)                                 | -105.7<br>(110.0)                         | 1.387<br>(1.273)                           | -112.4<br>(100.0)                            |                                   |             |               |             |               |             |
| Class size sq       | 0.668<br>(1.025)                                 | 36.82<br>(37.64)                          | 0.863<br>(1.074)                           | 33.82<br>(39.01)                             | 0.729<br>(0.982)                   | -0.194<br>(38.20)                         | 0.942<br>(0.909)                           | -6.971<br>(33.75)                            | -0.604<br>(0.941)                                | 60.75<br>(49.80)                          | -0.781<br>(1.149)                          | 63.72<br>(45.54)                             |                                   |             |               |             |               |             |
| Constant            |  | 123.9<br>(85.88)                          |  | 86.75<br>(98.18)                             |                                    | 10.67<br>(91.12)                          |  | -2.557<br>(87.98)                            |  | 86.91<br>(101.7)                          |  | 98.57<br>(99.55)                             |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | <b>-9.363***</b><br><b>(3.023)</b>               | <b>7.173</b><br><b>(7.664)</b>            | <b>-7.400***</b><br><b>(1.799)</b>         | <b>6.312</b><br><b>(8.227)</b>               | <b>-9.326***</b><br><b>(2.634)</b> | <b>9.272**</b><br><b>(4.231)</b>          | <b>-7.880***</b><br><b>(1.474)</b>         | <b>8.171*</b><br><b>(4.280)</b>              | <b>-5.947*</b><br><b>(3.082)</b>                 | <b>12.29*</b><br><b>(7.202)</b>           | <b>-5.361***</b><br><b>(1.724)</b>         | <b>13.61*</b><br><b>(7.051)</b>              |                                   |             |               |             |               |             |
| Raw Gap             |  | Boys<br><b>295.9***</b><br><b>(4.821)</b> | Girls<br><b>298.1***</b><br><b>(7.729)</b> | Total Gap<br><b>-2.190</b><br><b>(6.928)</b> |                                    | Boys<br><b>424.3***</b><br><b>(5.205)</b> | Girls<br><b>424.3***</b><br><b>(6.057)</b> | Total Gap<br><b>0.0535</b><br><b>(4.704)</b> |  | Boys<br><b>584.1***</b><br><b>(8.536)</b> | Girls<br><b>577.7***</b><br><b>(7.330)</b> | Total Gap<br><b>-6.344</b><br><b>(7.251)</b> |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 13: Iran decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |   |  |   | F(x) for girls Reweighted to Boys |   |  |  | Without reweighting<br>Girls are reference group |   |  |   | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|---|--|---|-----------------------------------|---|--|--|--|---|--|---|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |   | 50th quantile                              |   | 90th quantile                     |   | 10th quantile                              |  | 50th quantile                                    |   | 90th quantile                              |   | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained                               | Explained                                  | Unexplained                                   | Explained                         | Unexplained                               | Explained                                  | Unexplained                                  | Explained  | Unexplained                               | Explained                                  | Unexplained                                 | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | -0.0521<br>(0.231)                               | -5.153<br>(5.398)                         | -0.0905<br>(0.325)                         | -2.584<br>(9.737)                             | -0.0899<br>(0.159)                | -2.436<br>(3.096)                         | -0.156<br>(0.218)                          | -10.33<br>(11.45)                            | -0.00125<br>(0.102)                              | -0.798<br>(3.312)                         | -0.00218<br>(0.161)                        | -2.899<br>(5.996)                           |                                   |             |               |             |               |             |
| Upper-sec           | -0.295<br>(0.703)                                | -0.833<br>(3.256)                         | -0.643<br>(1.406)                          | -5.256<br>(6.765)                             | -0.773<br>(0.634)                 | 0.123<br>(1.857)                          | -1.687*<br>(0.897)                         | -2.911<br>(6.755)                            | 0.140<br>(0.432)                                 | 5.323*<br>(2.810)                         | 0.306<br>(0.912)                           | 2.136<br>(11.79)                            |                                   |             |               |             |               |             |
| Post-sec not UNI    | 0.241<br>(0.502)                                 | -0.964<br>(1.919)                         | 1.827<br>(3.284)                           | -0.794<br>(4.179)                             | 0.478<br>(0.713)                  | -1.458<br>(2.155)                         | 3.617<br>(4.382)                           | 0.529<br>(3.110)                             | -0.0935<br>(0.328)                               | 4.709*<br>(2.745)                         | -0.707<br>(2.374)                          | 5.136<br>(10.41)                            |                                   |             |               |             |               |             |
| University degree   | -0.0290<br>(0.470)                               | -0.897<br>(2.229)                         | -0.237<br>(1.148)                          | -4.502<br>(4.773)                             | -0.246<br>(0.743)                 | -1.774<br>(1.718)                         | -2.007*<br>(1.173)                         | -0.690<br>(3.178)                            | -0.344<br>(1.411)                                | 3.039<br>(3.072)                          | -2.815<br>(2.318)                          | 8.761<br>(10.41)                            |                                   |             |               |             |               |             |
| Native parents      | -0.0885<br>(0.447)                               | 36.28<br>(31.14)                          | -0.106<br>(0.663)                          | -44.50<br>(99.62)                             | 0.175<br>(0.238)                  | 47.06**<br>(21.76)                        | 0.210<br>(0.292)                           | -10.67<br>(37.09)                            | -0.303<br>(0.290)                                | 6.567<br>(18.83)                          | -0.363<br>(0.475)                          | -6.334<br>(31.59)                           |                                   |             |               |             |               |             |
| One bookcases       | 0.0540<br>(0.247)                                | -1.957<br>(1.739)                         | 0.671<br>(1.139)                           | 2.391<br>(5.494)                              | 0.0810<br>(0.374)                 | 0.482<br>(1.988)                          | 1.005<br>(1.626)                           | 4.619<br>(7.908)                             | 0.0902<br>(0.518)                                | 3.287<br>(3.191)                          | 1.120<br>(2.313)                           | -2.518<br>(8.798)                           |                                   |             |               |             |               |             |
| Two bookcases       | -0.247<br>(0.239)                                | -1.871<br>(1.589)                         | -0.773<br>(0.669)                          | 2.474<br>(5.117)                              | -0.436<br>(0.415)                 | -1.379<br>(1.613)                         | -1.364<br>(0.865)                          | -2.166<br>(3.303)                            | -0.734<br>(0.715)                                | -1.869<br>(2.667)                         | -2.299<br>(1.546)                          | -7.654<br>(6.784)                           |                                   |             |               |             |               |             |
| Home possess H      | -0.00631<br>(0.425)                              | 1.958<br>(5.404)                          | -0.0270<br>(2.157)                         | -28.12<br>(23.55)                             | 0.0360<br>(0.116)                 | 2.952<br>(6.311)                          | 0.154<br>(0.400)                           | -1.579<br>(13.50)                            | 0.0119<br>(0.218)                                | 9.187<br>(7.513)                          | 0.0510<br>(0.848)                          | 18.19<br>(39.56)                            |                                   |             |               |             |               |             |
| Home possess M      | -0.210<br>(0.363)                                | 3.797<br>(5.411)                          | -0.527<br>(0.843)                          | 8.978<br>(10.59)                              | -0.0637<br>(0.273)                | 5.144<br>(3.988)                          | -0.160<br>(0.687)                          | 13.59<br>(11.73)                             | 0.0734<br>(4.633)                                | 6.433<br>(4.633)                          | 0.185<br>(0.677)                           | 22.72<br>(25.30)                            |                                   |             |               |             |               |             |
| TL spoken ALs       | -1.403<br>(0.976)                                | 1.849<br>(6.582)                          | -0.999<br>(0.752)                          | 18.04<br>(13.68)                              | -1.747<br>(1.352)                 | -0.796<br>(6.043)                         | -1.244<br>(2.276)                          | 0.879<br>(9.125)                             | -1.730<br>(1.228)                                | -7.914<br>(7.571)                         | -1.232<br>(2.014)                          | -8.105<br>(15.37)                           |                                   |             |               |             |               |             |
| PC at H&SCL         | -0.258<br>(0.287)                                | -0.0939<br>(0.829)                        | -0.385<br>(0.455)                          | 4.020*<br>(2.388)                             | -0.275<br>(0.450)                 | 0.523<br>(1.460)                          | -0.411<br>(0.735)                          | 0.375<br>(1.198)                             | -1.922<br>(4.182)                                | -2.506<br>(4.327)                         | -2.876<br>(6.252)                          | -5.470<br>(18.59)                           |                                   |             |               |             |               |             |
| PC at H/SCL         | 0.284<br>(0.615)                                 | -1.625<br>(4.939)                         | 1.125<br>(2.050)                           | 27.64<br>(20.23)                              | 0.160<br>(0.372)                  | 1.453<br>(5.622)                          | 0.635<br>(1.230)                           | 11.46<br>(18.14)                             | 0.414<br>(0.893)                                 | -6.694<br>(5.968)                         | 1.639<br>(2.935)                           | 7.472<br>(10.40)                            |                                   |             |               |             |               |             |
| Male teacher        | -22.50*<br>(11.92)                               | 34.98<br>(61.21)                          | -22.76*<br>(11.86)                         | 13.17<br>(64.47)                              | -23.16<br>(14.56)                 | 26.91<br>(47.03)                          | -23.43<br>(14.75)                          | 26.51<br>(46.56)                             | -18.23<br>(19.23)                                | 31.60<br>(47.78)                          | -18.44<br>(19.53)                          | 94.45*<br>(54.03)                           |                                   |             |               |             |               |             |
| T. Experience       | 0.656<br>(1.781)                                 | -1.212<br>(18.73)                         | -0.146<br>(3.366)                          | 0.248<br>(30.11)                              | 0.760<br>(1.543)                  | -4.604<br>(14.74)                         | -0.169<br>(2.318)                          | 2.451<br>(28.28)                             | 2.607<br>(2.420)                                 | -28.62<br>(19.27)                         | -0.579<br>(3.854)                          | -15.33<br>(50.81)                           |                                   |             |               |             |               |             |
| T. Certificate!     |  |   |  |   |                                   |   |  |  |  |   |  |   |                                   |             |               |             |               |             |
| M SCL RCS           | -0.0789<br>(0.321)                               | -10.44<br>(11.60)                         | -0.542<br>(1.340)                          | -24.22<br>(24.70)                             | -0.192<br>(0.617)                 | -7.856<br>(12.79)                         | -1.318<br>(1.986)                          | 7.468<br>(16.78)                             | -0.0956<br>(0.664)                               | -25.79<br>(30.86)                         | -0.657<br>(3.358)                          | 42.69<br>(42.56)                            |                                   |             |               |             |               |             |
| L SCL RSC           | 0.00176<br>(0.162)                               | -8.402**<br>(4.211)                       | 0.0635<br>(0.719)                          | -16.46*<br>(9.637)                            | 0.0208<br>(0.606)                 | -4.603<br>(4.239)                         | 0.750<br>(1.259)                           | 0.210<br>(6.937)                             | 0.0185<br>(0.298)                                | -4.538<br>(8.128)                         | 0.667<br>(1.517)                           | 13.99<br>(15.89)                            |                                   |             |               |             |               |             |
| T. UNI Degree       | -0.745<br>(0.874)                                | -6.238<br>(8.260)                         | -2.694<br>(2.891)                          | -20.91<br>(29.42)                             | -0.119<br>(0.689)                 | 1.775<br>(5.041)                          | -0.431<br>(2.457)                          | 0.796<br>(17.45)                             | 0.628<br>(1.125)                                 | 11.38<br>(7.837)                          | 2.273<br>(3.603)                           | 19.88<br>(22.13)                            |                                   |             |               |             |               |             |
| COMMU.>50000        | 0.314<br>(1.077)                                 | -17.86*<br>(10.45)                        | 2.226<br>(4.720)                           | -11.94<br>(15.63)                             | 0.221<br>(0.728)                  | -0.577<br>(9.314)                         | 1.569<br>(3.534)                           | -11.37<br>(25.00)                            | 0.0647<br>(0.400)                                | 12.16<br>(10.08)                          | 0.458<br>(2.423)                           | 12.88<br>(26.23)                            |                                   |             |               |             |               |             |
| Pov 50% Disadv      | -0.417<br>(1.490)                                | -5.420<br>(9.793)                         | 0.192<br>(2.535)                           | -8.840<br>(28.21)                             | -0.891<br>(1.138)                 | -4.084<br>(7.165)                         | 0.410<br>(2.953)                           | -13.71<br>(30.77)                            | 0.712<br>(2.182)                                 | -8.964<br>(12.13)                         | -0.328<br>(3.197)                          | -8.910<br>(27.17)                           |                                   |             |               |             |               |             |
| Class size          | 0.439<br>(6.209)                                 | 272.3<br>(219.4)                          | 1.379<br>(22.72)                           | 180.8<br>(224.0)                              | -5.142<br>(5.784)                 | 166.2<br>(144.9)                          | -16.14<br>(23.78)                          | -0.282<br>(168.3)                            | -16.75<br>(16.04)                                | 229.7<br>(75.92)                          | -52.58<br>(192.2)                          | 13.33<br>(271.1)                            |                                   |             |               |             |               |             |
| Class size sq       | -0.987<br>(4.960)                                | -115.0<br>(116.6)                         | -4.242<br>(24.40)                          | -88.02<br>(148.9)                             | 4.147<br>(5.692)                  | -81.82<br>(78.07)                         | 17.81<br>(26.73)                           | 30.20<br>(115.4)                             | 14.32<br>(17.48)                                 | -146.5<br>(107.5)                         | 61.52<br>(85.69)                           | -27.89<br>(171.8)                           |                                   |             |               |             |               |             |
| Constant            |  | -162.2<br>(107.7)                         |  | 11.50<br>(221.5)                              |                                   | -120.2<br>(87.77)                         |  | -32.45<br>(134.4)                            |  | -65.76<br>(95.95)                         |  | -136.6<br>(150.0)                           |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | <b>-27.38**</b><br><b>(11.43)</b>                | <b>11.14</b><br><b>(12.83)</b>            | <b>-29.80**</b><br><b>(12.25)</b>          | <b>2.585</b><br><b>(15.86)</b>                | <b>-27.04*</b><br><b>(16.42)</b>  | <b>20.35</b><br><b>(15.22)</b>            | <b>-26.88</b><br><b>(19.94)</b>            | <b>14.03</b><br><b>(13.05)</b>               | <b>-15.17</b><br><b>(22.25)</b>                  | <b>17.65</b><br><b>(20.44)</b>            | <b>-14.71</b><br><b>(21.60)</b>            | <b>38.57*</b><br><b>(21.02)</b>             |                                   |             |               |             |               |             |
| Raw Gap             |  | Boys<br><b>287.5***</b><br><b>(7.344)</b> | Girls<br><b>303.7***</b><br><b>(5.504)</b> | Total Gap<br><b>-16.24*</b><br><b>(9.314)</b> |                                   | Boys<br><b>397.8***</b><br><b>(6.456)</b> | Girls<br><b>404.5***</b><br><b>(5.387)</b> | Total Gap<br><b>-6.689</b><br><b>(8.398)</b> |  | Boys<br><b>517.4***</b><br><b>(9.796)</b> | Girls<br><b>514.9***</b><br><b>(10.17)</b> | Total Gap<br><b>2.475</b><br><b>(14.02)</b> |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.



Table B. 14: Jordan decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |                                  |  |                          | F(x) for girls Reweighted to Boys |                                  |  |                          | Without reweighting<br>Girls are reference group |                                  |                                       |                          | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|----------------------------------|--|--------------------------|-----------------------------------|----------------------------------|--|--------------------------|--|----------------------------------|---------------------------------------|--------------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |                                  | 50th quantile                            |                          | 90th quantile                     |                                  | 10th quantile                          |                          | 50th quantile                                    |                                  | 90th quantile                         |                          | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained                      | Explained                                | Unexplained              | Explained                         | Unexplained                      | Explained                              | Unexplained              | Explained  | Unexplained                      | Explained                             | Unexplained              | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.162<br>(0.522)                                 | 1.118<br>(2.928)                 | 0.972<br>(3.104)                         | -9.295<br>(7.896)        | 0.0400<br>(0.240)                 | -0.308<br>(1.619)                | 0.240<br>(1.309)                       | -3.552<br>(3.584)        | 0.155<br>(0.221)                                 | 1.549<br>(1.389)                 | 0.930<br>(1.169)                      | -0.900<br>(6.226)        |                                   |             |               |             |               |             |
| Upper-sec           | -1.008<br>(1.390)                                | 3.122<br>(6.268)                 | -4.401<br>(5.679)                        | -19.72<br>(27.14)        | -0.573<br>(0.811)                 | 1.152<br>(4.546)                 | -2.502<br>(3.483)                      | -6.587<br>(14.35)        | 0.660<br>(0.884)                                 | 5.994<br>(4.085)                 | 2.884<br>(3.403)                      | -14.53<br>(20.75)        |                                   |             |               |             |               |             |
| Post-sec not UNI    | -1.114<br>(1.130)                                | 1.660<br>(4.778)                 | -5.235<br>(4.246)                        | -28.35<br>(19.79)        | -1.910*<br>(1.026)                | -0.0138<br>(4.355)               | -8.980***<br>(2.911)                   | -3.085<br>(9.707)        | -0.424<br>(0.507)                                | 5.292**<br>(2.653)               | -1.991<br>(2.404)                     | 2.409<br>(17.74)         |                                   |             |               |             |               |             |
| University degree   | 1.580<br>(1.636)                                 | 1.074<br>(7.689)                 | 19.28<br>(15.11)                         | -65.32*<br>(37.86)       | 2.381*<br>(1.280)                 | -0.921<br>(6.730)                | 29.06***<br>(9.834)                    | -29.35<br>(23.06)        | 1.570*<br>(0.943)                                | 5.428<br>(5.289)                 | 19.16*<br>(10.35)                     | -12.83<br>(35.00)        |                                   |             |               |             |               |             |
| Native parents      | -0.171<br>(0.605)                                | -10.01<br>(11.35)                | -2.342<br>(3.908)                        | -9.257<br>(6.392)        | -0.0685<br>(0.192)                | -6.121<br>(7.723)                | -0.935<br>(1.814)                      | -36.00<br>(47.76)        | -0.0201<br>(0.217)                               | -15.46*<br>(8.913)               | -0.274<br>(2.688)                     | -71.69<br>(60.87)        |                                   |             |               |             |               |             |
| One bookcases       | -0.353<br>(0.407)                                | 1.799<br>(3.999)                 | -2.205<br>(2.313)                        | 10.92<br>(22.00)         | -0.241<br>(0.273)                 | 4.222<br>(3.276)                 | -1.506<br>(1.521)                      | -2.447<br>(20.24)        | -0.392<br>(0.347)                                | -1.750<br>(3.081)                | -2.447<br>(1.756)                     | -12.54<br>(18.11)        |                                   |             |               |             |               |             |
| Two bookcases       | 0.0221<br>(0.0737)                               | 0.236<br>(2.904)                 | 1.795<br>(3.316)                         | 6.295<br>(14.73)         | 0.0610<br>(0.328)                 | 2.349<br>(3.240)                 | 4.961<br>(5.020)                       | 10.49<br>(15.48)         | 0.0662<br>(0.291)                                | 1.022<br>(3.818)                 | 5.387<br>(4.606)                      | 23.12<br>(16.49)         |                                   |             |               |             |               |             |
| Home possess H      | 0.261<br>(2.984)                                 | -3.541<br>(17.91)                | 42.05***<br>(14.08)                      | -49.34<br>(52.77)        | 0.217<br>(2.498)                  | -5.242<br>(8.678)                | 34.97***<br>(7.026)                    | 6.720<br>(22.47)         | 0.0281<br>(0.296)                                | 3.470<br>(7.476)                 | 4.527<br>(4.753)                      | -32.18<br>(66.28)        |                                   |             |               |             |               |             |
| Home possess M      | -3.499*<br>(2.122)                               | 4.474<br>(15.66)                 | -28.40***<br>(10.77)                     | -32.33<br>(41.29)        | -2.829**<br>(1.423)               | -6.662<br>(6.564)                | -22.96***<br>(4.979)                   | -13.51<br>(22.03)        | -0.542<br>(0.498)                                | 0.473<br>(5.343)                 | -4.398<br>(3.892)                     | -20.49<br>(34.96)        |                                   |             |               |             |               |             |
| TL spoken ALs       | -0.223<br>(0.400)                                | -1.547<br>(15.23)                | 0.849<br>(1.417)                         | 2.674<br>(11.58)         | -0.403<br>(0.497)                 | -12.67<br>(9.835)                | 1.532<br>(1.308)                       | 41.60<br>(93.56)         | -0.423<br>(0.523)                                | -0.657<br>(10.83)                | 1.608<br>(1.617)                      | 32.94<br>(30.03)         |                                   |             |               |             |               |             |
| PC at H&SCL         | -0.0114<br>(0.526)                               | -6.436<br>(11.87)                | 0.0883<br>(4.153)                        | -2.492<br>(83.18)        | -0.0345<br>(0.423)                | 3.206<br>(9.877)                 | 0.266<br>(2.852)                       | 17.17<br>(69.37)         | -0.308<br>(0.633)                                | -0.620<br>(8.588)                | 2.378<br>(2.172)                      | 27.60<br>(23.39)         |                                   |             |               |             |               |             |
| PC at H/SCL         | -0.0811<br>(0.368)                               | -10.53<br>(13.02)                | 3.171<br>(3.159)                         | -18.38<br>(63.37)        | -0.0490<br>(0.635)                | -2.720<br>(7.452)                | 1.915<br>(1.773)                       | -13.84<br>(58.14)        | -0.0166<br>(0.0738)                              | 1.877<br>(7.651)                 | 0.647<br>(1.708)                      | -11.87<br>(31.78)        |                                   |             |               |             |               |             |
| Male teacher        | -50.07<br>(35.41)                                | 74.83*<br>(43.65)                | -54.90<br>(38.82)                        | 49.51*<br>(25.80)        | -14.27<br>(27.87)                 | 29.75<br>(30.11)                 | -15.64<br>(30.47)                      | 10.50<br>(40.24)         | -34.90<br>(35.15)                                | 49.06<br>(32.48)                 | -38.27<br>(38.28)                     | 43.83<br>(43.51)         |                                   |             |               |             |               |             |
| T. Experience       | 0.135<br>(0.615)                                 | -3.412<br>(15.02)                | 2.400<br>(4.274)                         | 19.51<br>(38.83)         | 0.231<br>(1.811)                  | -13.61<br>(12.22)                | 4.098<br>(5.040)                       | 3.114<br>(57.62)         | 0.320<br>(2.286)                                 | -23.94**<br>(9.465)              | 5.680<br>(5.013)                      | 13.03<br>(41.44)         |                                   |             |               |             |               |             |
| T. Certificate!     | -0.181<br>(0.540)                                | 9.104<br>(17.48)                 | -1.104<br>(2.728)                        | -2.069<br>(49.35)        | 0.0696<br>(0.518)                 | -0.587<br>(18.69)                | 0.424<br>(2.988)                       | 14.82<br>(40.12)         | 0.100<br>(0.538)                                 | -1.736<br>(16.24)                | 0.611<br>(2.137)                      | -43.34<br>(69.88)        |                                   |             |               |             |               |             |
| M SCL RCS           | -0.0411<br>(0.407)                               | -22.08<br>(16.32)                | -1.737<br>(4.824)                        | 3.144<br>(48.73)         | -0.0599<br>(0.559)                | -20.99<br>(18.18)                | -2.529<br>(4.869)                      | 21.83<br>(35.90)         | 0.0376<br>(0.222)                                | -11.61<br>(14.69)                | 1.587<br>(3.616)                      | 1.801<br>(42.62)         |                                   |             |               |             |               |             |
| L SCL RSC           | 0.0185<br>(1.200)                                | -6.546*<br>(3.757)               | -2.697<br>(1.931)                        | -9.063<br>(7.596)        | 0.0312<br>(2.099)                 | -7.916**<br>(3.587)              | -4.543**<br>(2.294)                    | -6.386<br>(11.10)        | 0.00779<br>(0.846)                               | -3.795<br>(2.982)                | -1.136<br>(2.275)                     | -6.785<br>(7.085)        |                                   |             |               |             |               |             |
| T. UNI Degree       | 1.064<br>(2.023)                                 | 52.23<br>(38.40)                 | 6.624<br>(10.69)                         | 18.59<br>(58.78)         | 0.508<br>(1.952)                  | 32.57<br>(32.85)                 | 3.160<br>(10.35)                       | 42.47<br>(114.8)         | 0.778<br>(1.804)                                 | 24.60<br>(33.26)                 | 4.845<br>(9.441)                      | 97.56<br>(75.75)         |                                   |             |               |             |               |             |
| COMMU.>50000        | 2.014<br>(2.217)                                 | -9.803<br>(11.36)                | 4.179<br>(6.835)                         | -0.884<br>(31.34)        | 3.010<br>(2.730)                  | -4.358<br>(9.583)                | 6.247<br>(8.500)                       | 6.531<br>(23.38)         | 2.114<br>(2.016)                                 | -1.652<br>(7.955)                | -1.852<br>(6.015)                     | -21.91<br>(40.36)        |                                   |             |               |             |               |             |
| Pov 50% Disadv      | 1.769<br>(1.577)                                 | -1.416<br>(7.718)                | 7.616<br>(5.339)                         | 10.59<br>(21.12)         | 1.427<br>(2.037)                  | -1.573<br>(8.159)                | 6.145<br>(6.059)                       | -8.591<br>(17.34)        | 1.621<br>(1.856)                                 | 4.953<br>(6.008)                 | 6.976<br>(4.362)                      | -14.82<br>(21.26)        |                                   |             |               |             |               |             |
| Class size          | 0.0527<br>(3.445)                                | -26.20<br>(201.0)                | 0.760<br>(59.05)                         | -454.8<br>(382.9)        | 1.073<br>(4.810)                  | -26.21<br>(175.2)                | 15.49<br>(55.23)                       | -294.3<br>(503.7)        | 5.667<br>(7.911)                                 | 166.5<br>(166.9)                 | 81.78<br>(55.36)                      | 52.33<br>(346.1)         |                                   |             |               |             |               |             |
| Class size sq       | -0.0131<br>(3.780)                               | -10.24<br>(104.1)                | -0.140<br>(51.05)                        | 332.5<br>(295.2)         | -0.124<br>(4.111)                 | -16.90<br>(85.05)                | -1.321<br>(44.13)                      | 101.4<br>(344.8)         | -4.864<br>(6.016)                                | -89.51<br>(80.53)                | -51.74<br>(42.45)                     | -80.69<br>(213.6)        |                                   |             |               |             |               |             |
| Constant            |  | -19.02<br>(161.7)                |  | 266.3<br>(255.3)         |                                   | 56.07<br>(122.6)                 |  | 124.6<br>(315.3)         |  | -106.0<br>(133.7)                |                                       | 76.89<br>(403.1)         |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | <b>-56.70*</b><br>(34.29)                        | <b>18.84</b><br>(34.48)          | <b>-3.506</b><br>(36.78)                 | <b>-2.114</b><br>(49.49) | <b>-15.28</b><br>(27.78)          | <b>-3.103</b><br>(26.62)         | <b>45.35</b><br>(32.74)                | <b>-33.53</b><br>(27.65) | <b>-28.36</b><br>(34.28)                         | <b>20.18</b><br>(33.71)          | <b>42.03*</b><br>(24.01)              | <b>-14.75</b><br>(34.85) |                                   |             |               |             |               |             |
| Raw Gap             | Boys<br><b>274.0</b><br>(7.372)                  | Girls<br><b>311.9</b><br>(8.635) | Total Gap<br><b>-37.86***</b><br>(10.99) |                          | Boys<br><b>422.9</b><br>(6.733)   | Girls<br><b>441.2</b><br>(7.779) | Total Gap<br><b>-18.38*</b><br>(10.53) |                          | Boys<br><b>551.7</b><br>(4.355)                  | Girls<br><b>559.9</b><br>(5.762) | Total Gap<br><b>-8.183</b><br>(7.273) |                          |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 15: Saudi Arabia decomposition of maths test scores by gender (girls as reference)

| VARIABLES           | Without reweighting<br>Girls are reference group |                           |                                   |                      | F(x) for girls Reweighted to Boys |                           |                                   |                      | Without reweighting<br>Girls are reference group |                           |                                 |                     | F(x) for girls Reweighted to Boys |             |               |             |               |             |
|---------------------|--|---------------------------|-----------------------------------|----------------------|-----------------------------------|---------------------------|-----------------------------------|----------------------|--|---------------------------|---------------------------------|---------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                    |                           | 50th quantile                     |                      | 90th quantile                     |                           | 10th quantile                     |                      | 50th quantile                                    |                           | 90th quantile                   |                     | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained  | Unexplained               | Explained                         | Unexplained          | Explained                         | Unexplained               | Explained                         | Unexplained          | Explained  | Unexplained               | Explained                       | Unexplained         | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.0700<br>(0.194)                                | -1.894<br>(2.947)         | 0.737<br>(1.943)                  | -2.876<br>(2.885)    | -0.239<br>(0.286)                 | -3.624<br>(2.253)         | -2.512<br>(1.574)                 | -1.659<br>(2.233)    | -0.174<br>(0.215)                                | -3.134<br>(2.685)         | -1.836<br>(1.467)               | -1.782<br>(2.445)   |                                   |             |               |             |               |             |
| Upper-sec           | -0.135<br>(0.513)                                | -1.754<br>(3.524)         | 4.950<br>(12.24)                  | -1.251<br>(2.130)    | -0.200<br>(0.238)                 | -3.426<br>(2.434)         | 7.353<br>(6.756)                  | -2.376<br>(2.553)    | -0.00259<br>(0.188)                              | -2.961<br>(3.080)         | 0.0950<br>(7.095)               | -3.562<br>(2.795)   |                                   |             |               |             |               |             |
| Post-sec not UNI    | -0.0664<br>(0.176)                               | -0.0164<br>(0.917)        | -0.342<br>(0.823)                 | 0.215<br>(0.735)     | -0.205<br>(0.278)                 | 0.285<br>(0.841)          | -1.055<br>(0.776)                 | 1.091<br>(0.838)     | -0.109<br>(0.156)                                | -0.0299<br>(1.187)        | -0.561<br>(0.831)               | 0.378<br>(1.054)    |                                   |             |               |             |               |             |
| University degree   | -0.101<br>(0.442)                                | -1.587<br>(5.147)         | -2.741<br>(4.024)                 | 0.205<br>(3.792)     | -0.331<br>(0.513)                 | -5.843<br>(3.768)         | -8.946***<br>(2.777)              | 1.925<br>(3.727)     | -0.402<br>(0.538)                                | -5.581<br>(6.342)         | -10.86***<br>(3.895)            | 4.033<br>(5.021)    |                                   |             |               |             |               |             |
| Native parents      | 0.0405<br>(0.533)                                | -0.787<br>(9.937)         | -0.154<br>(1.865)                 | -1.014<br>(7.513)    | 0.713<br>(0.453)                  | 5.715<br>(6.836)          | -2.715*<br>(1.619)                | -4.130<br>(6.145)    | 0.940<br>(0.647)                                 | -5.961<br>(11.28)         | -3.578*<br>(2.126)              | -19.05**<br>(8.838) |                                   |             |               |             |               |             |
| One bookcases       | -0.131<br>(1.068)                                | 1.486<br>(3.682)          | 0.984<br>(8.045)                  | 1.341<br>(2.393)     | -1.317<br>(0.828)                 | 0.680<br>(2.499)          | 9.921*<br>(5.741)                 | 3.112<br>(2.217)     | -0.941<br>(0.743)                                | 3.786<br>(3.826)          | 5.402*<br>(5.594)               | 3.047<br>(3.047)    |                                   |             |               |             |               |             |
| Two bookcases       | -0.0512<br>(0.807)                               | -0.482<br>(2.331)         | -0.176<br>(2.636)                 | -0.424<br>(1.912)    | -0.595<br>(0.461)                 | -0.549<br>(1.791)         | -2.042<br>(1.545)                 | 0.831<br>(1.275)     | -1.228**<br>(0.621)                              | -0.0507<br>(2.517)        | -4.216**<br>(1.805)             | 2.871<br>(2.035)    |                                   |             |               |             |               |             |
| Home possess H      | -4.018*<br>(2.345)                               | 13.61<br>(12.40)          | -17.15*<br>(9.752)                | 25.98***<br>(8.456)  | -3.902*<br>(2.086)                | 9.859<br>(7.568)          | -16.66**<br>(8.036)               | 21.85***<br>(4.404)  | -3.050**<br>(1.528)                              | 7.149<br>(7.124)          | -13.02**<br>(5.359)             | 16.36**<br>(6.449)  |                                   |             |               |             |               |             |
| Home possess M      | 0.177<br>(0.305)                                 | 16.31<br>(10.18)          | 7.629<br>(12.64)                  | 21.76***<br>(6.188)  | 0.208<br>(0.373)                  | 7.121<br>(8.632)          | 8.935<br>(9.877)                  | 13.40**<br>(5.222)   | 0.0652<br>(0.217)                                | 2.929<br>(5.579)          | 2.807<br>(6.423)                | 5.371<br>(4.329)    |                                   |             |               |             |               |             |
| TL spoken ALs       | -0.990<br>(0.806)                                | 3.815<br>(7.065)          | -3.524<br>(2.852)                 | -2.197<br>(6.084)    | -0.259<br>(0.686)                 | -2.285<br>(6.991)         | -0.922<br>(2.409)                 | -4.402<br>(5.749)    | -0.394<br>(1.043)                                | -5.663<br>(9.247)         | -1.404<br>(3.639)               | -8.502<br>(5.552)   |                                   |             |               |             |               |             |
| PC at H&SCL         | -2.296<br>(3.197)                                | -3.835<br>(5.083)         | -12.58<br>(17.33)                 | -8.212***<br>(2.677) | -1.713<br>(2.154)                 | -2.463<br>(4.255)         | -9.386<br>(11.73)                 | -5.938**<br>(2.771)  | -2.464<br>(2.074)                                | 2.429<br>(4.295)          | -13.51<br>(11.36)               | 2.208<br>(3.620)    |                                   |             |               |             |               |             |
| PC at H/SCL         | 0.846<br>(1.730)                                 | -8.604<br>(7.922)         | 3.976<br>(8.159)                  | -12.77***<br>(4.476) | 1.803*<br>(0.973)                 | -2.154<br>(5.031)         | 8.475*<br>(4.546)                 | -9.868***<br>(3.596) | 1.617<br>(1.221)                                 | 7.400<br>(7.213)          | 6.600<br>(5.425)                | 0.376<br>(6.944)    |                                   |             |               |             |               |             |
| Male teacher        | -47.33<br>(102.8)                                | 65.45<br>(103.7)          | -50.26<br>(109.2)                 | 17.59<br>(35.64)     | -41.37<br>(41.41)                 | 66.73<br>(49.93)          | -43.93<br>(43.88)                 | 24.85<br>(20.45)     | -6.372<br>(10.30)                                | -12.65<br>(35.18)         | -6.767<br>(10.90)               | -19.47<br>(37.52)   |                                   |             |               |             |               |             |
| T. Experience       | 2.453<br>(3.106)                                 | -13.28<br>(13.00)         | 6.102<br>(6.039)                  | -3.693<br>(7.262)    | 2.829<br>(2.868)                  | -11.89<br>(10.38)         | 7.038<br>(5.094)                  | -0.644<br>(5.848)    | 1.917<br>(2.850)                                 | -5.753<br>(10.48)         | 4.770<br>(5.016)                | 1.474<br>(6.245)    |                                   |             |               |             |               |             |
| T. Certificate!     |  |                           |                                   |                      |                                   |                           |                                   |                      |  |                           |                                 |                     |                                   |             |               |             |               |             |
| M SCL RCS           | 0.649<br>(1.823)                                 | 16.04<br>(14.74)          | -4.408<br>(3.321)                 | 4.179<br>(12.88)     | 1.287<br>(3.338)                  | 31.20**<br>(13.95)        | -8.735***<br>(3.195)              | 6.375<br>(12.23)     | 1.353<br>(3.508)                                 | 18.69<br>(19.67)          | -9.181**<br>(3.794)             | -7.469<br>(15.60)   |                                   |             |               |             |               |             |
| L SCL RSC           | 1.411<br>(1.807)                                 | 1.031<br>(3.343)          | 3.699<br>(2.784)                  | -1.289<br>(2.878)    | 2.364<br>(1.985)                  | 3.049<br>(3.049)          | 6.197**<br>(2.686)                | -0.816<br>(2.430)    | 2.079<br>(2.466)                                 | 1.392<br>(3.370)          | 5.451<br>(3.332)                | -2.011<br>(2.773)   |                                   |             |               |             |               |             |
| T. UNI Degree       | -0.461<br>(1.167)                                | 9.601<br>(28.32)          | -1.687<br>(2.138)                 | -1.803<br>(25.03)    | -0.565<br>(0.772)                 | 17.85<br>(28.34)          | -2.067<br>(2.606)                 | 3.085<br>(18.74)     | -0.844<br>(1.625)                                | 11.90<br>(49.33)          | -3.088<br>(2.907)               | -11.88<br>(46.11)   |                                   |             |               |             |               |             |
| COMMU.>50000        | -0.252<br>(0.492)                                | 0.988<br>(7.151)          | -4.435<br>(4.415)                 | 6.467<br>(5.536)     | -0.406<br>(1.419)                 | -0.793<br>(5.948)         | -7.152<br>(4.654)                 | 7.253*<br>(4.409)    | -0.443<br>(0.746)                                | 2.673<br>(6.875)          | -7.798*<br>(4.435)              | 11.33**<br>(4.585)  |                                   |             |               |             |               |             |
| Pov 50% Disadv      | 0.104<br>(0.613)                                 | 0.180<br>(2.754)          | -4.096<br>(10.45)                 | -0.476<br>(1.686)    | -0.0118<br>(0.120)                | -2.675<br>(2.444)         | 0.464<br>(8.614)                  | -2.500<br>(2.361)    | 0.0291<br>(0.332)                                | -0.611<br>(2.459)         | -1.143<br>(8.319)               | -0.729<br>(2.031)   |                                   |             |               |             |               |             |
| Class size          | 0.910<br>(2.766)                                 | 20.84<br>(75.33)          | 0.887<br>(2.500)                  | -18.35<br>(73.98)    | 1.140<br>(1.567)                  | 49.82<br>(51.92)          | 1.111<br>(1.520)                  | 5.693<br>(46.24)     | 0.911<br>(1.554)                                 | 36.28<br>(66.70)          | 0.887<br>(1.446)                | -2.933<br>(80.43)   |                                   |             |               |             |               |             |
| Class size sq       | -2.109<br>(3.857)                                | -8.914<br>(29.58)         | -3.017<br>(5.379)                 | 13.14<br>(38.99)     | -2.715<br>(3.501)                 | -23.91<br>(20.19)         | -3.883<br>(5.026)                 | -0.267<br>(27.67)    | -1.566<br>(2.648)                                | -16.80<br>(30.28)         | -2.240<br>(3.774)               | 3.836<br>(42.89)    |                                   |             |               |             |               |             |
| Constant            | -98.18<br>(63.97)                                | -52.22<br>(19.20)         | -121.9**<br>(109.0)               | 60.51<br>(44.13)     | -121.9**<br>(40.77)               | 60.51<br>(43.67)          | -121.9**<br>(45.79)               | 60.51<br>(42.24)     | 9.239<br>(62.63)                                 | -41.07<br>(58.80)         | 188.8**<br>(76.34)              |                     |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | -53.08<br>(103.3)                                | 19.20<br>(100.2)          | -67.25<br>(109.0)                 | -16.15<br>(44.13)    | -44.59<br>(40.77)                 | 20.32<br>(43.67)          | -54.64<br>(45.79)                 | 69.21<br>(42.24)     | -9.002<br>(11.92)                                | -1.552<br>(13.29)         | -44.63**<br>(17.36)             | 159.5***<br>(44.19) |                                   |             |               |             |               |             |
| Raw Gap             | Boys<br>216.9<br>(5.569)                         | Girls<br>250.8<br>(5.555) | Total Gap<br>-33.88***<br>(7.671) |                      | Boys<br>317.7<br>(5.359)          | Girls<br>342.0<br>(4.030) | Total Gap<br>-24.27***<br>(7.012) |                      | Boys<br>423.5<br>(4.361)                         | Girls<br>434.1<br>(3.902) | Total Gap<br>-10.55*<br>(5.760) |                     |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 16: Egypt decomposition of maths test scores by gender (girls as reference)

| VARIABLES          | Without reweighting<br>Girls are reference group |                           |                                 |                          | F(x) for girls Reweighted to<br>Boys |                                 |                          |                           | Without reweighting<br>Girls are reference group |                     |                     |                     | F(x) for girls Reweighted to<br>Boys |             |               |             |               |             |
|--------------------|--|---------------------------|---------------------------------|--------------------------|--------------------------------------|---------------------------------|--------------------------|---------------------------|--|---------------------|---------------------|---------------------|--------------------------------------|-------------|---------------|-------------|---------------|-------------|
|                    | 10th quantile                                    |                           | 50th quantile                   |                          | 90th quantile                        |                                 | 10th quantile            |                           | 50th quantile                                    |                     | 90th quantile       |                     | 10th quantile                        |             | 50th quantile |             | 90th quantile |             |
|                    | Explained  | Unexplained               | Explained                       | Unexplained              | Explained                            | Unexplained                     | Explained                | Unexplained               | Explained  | Unexplained         | Explained           | Unexplained         | Explained                            | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC      | -0.336<br>(0.728)                                | -1.671<br>(6.772)         | -0.352<br>(0.757)               | -2.040<br>(9.188)        | -0.143<br>(0.366)                    | 3.543<br>(4.638)                | -0.149<br>(0.391)        | 4.305<br>(5.719)          | -0.0193<br>(0.353)                               | 1.057<br>(3.401)    | -0.0202<br>(0.370)  | 2.270<br>(4.143)    |                                      |             |               |             |               |             |
| Upper-sec          | -0.250<br>(0.512)                                | 0.631<br>(3.574)          | -0.235<br>(0.455)               | 1.582<br>(4.455)         | -0.331<br>(0.306)                    | 3.262<br>(2.081)                | -0.311<br>(0.287)        | 4.311*<br>(2.223)         | -0.0952<br>(0.287)                               | 4.404*<br>(2.382)   | -0.0892<br>(0.264)  | 6.339**<br>(2.873)  |                                      |             |               |             |               |             |
| Post-sec not UNI   | 0.00825<br>(0.110)                               | -0.674<br>(4.762)         | 0.0332<br>(0.0592)              | -1.114<br>(6.490)        | 0.0150<br>(0.502)                    | 1.167<br>(2.800)                | 0.0601<br>(0.199)        | 1.363<br>(2.613)          | 0.0187<br>(0.871)                                | 2.335<br>(4.706)    | 0.0751<br>(0.340)   | 3.508<br>(5.436)    |                                      |             |               |             |               |             |
| University degree  | 0.0665<br>(0.910)                                | -0.401<br>(5.319)         | 0.0639<br>(0.881)               | -0.833<br>(6.586)        | -0.202<br>(0.422)                    | 2.066<br>(2.592)                | -0.194<br>(0.391)        | 1.431<br>(2.960)          | -0.00568<br>(0.446)                              | 3.007<br>(3.102)    | -0.00546<br>(0.425) | 3.385<br>(3.684)    |                                      |             |               |             |               |             |
| Native parents     | -1.144<br>(1.132)                                | 6.279<br>(15.42)          | -0.904<br>(0.627)               | 1.275<br>(17.86)         | -1.409<br>(1.277)                    | 21.89***<br>(8.296)             | -1.114**<br>(0.540)      | 17.15*<br>(9.067)         | -0.730<br>(0.850)                                | 14.74*<br>(7.521)   | -0.577*<br>(0.333)  | 9.051<br>(7.079)    |                                      |             |               |             |               |             |
| One bookcases      | -0.00158<br>(0.202)                              | 2.466<br>(2.722)          | -0.00175<br>(0.231)             | 3.230<br>(3.245)         | -0.242<br>(0.293)                    | 0.957<br>(3.014)                | -0.267<br>(0.222)        | 1.552<br>(3.205)          | -0.121<br>(0.169)                                | 2.381<br>(3.058)    | -0.134<br>(0.186)   | 2.394<br>(3.287)    |                                      |             |               |             |               |             |
| Two bookcases      | -0.0515<br>(0.108)                               | 0.471<br>(2.182)          | -0.0522<br>(0.107)              | 0.660<br>(2.056)         | 0.00598<br>(0.0745)                  | -0.407<br>(1.749)               | 0.00606<br>(0.0689)      | -0.289<br>(1.710)         | 0.0197<br>(0.0975)                               | 1.455<br>(1.682)    | 0.0199<br>(0.0761)  | 0.0949<br>(1.822)   |                                      |             |               |             |               |             |
| Home possess H     | 0.899<br>(2.353)                                 | -8.049<br>(5.861)         | 0.331<br>(0.782)                | -5.063<br>(6.349)        | 0.892<br>(2.114)                     | -2.025<br>(4.285)               | 0.328<br>(0.715)         | -3.245<br>(4.996)         | 0.594<br>(1.288)                                 | 0.317<br>(4.707)    | 0.219<br>(0.431)    | 2.736<br>(5.444)    |                                      |             |               |             |               |             |
| Home possess M     | -1.879<br>(1.324)                                | -12.65<br>(11.98)         | -1.683**<br>(0.694)             | -7.535<br>(12.85)        | -1.784<br>(1.212)                    | -6.414<br>(6.732)               | -1.598***<br>(0.590)     | -7.757<br>(8.326)         | -0.931<br>(0.610)                                | -2.059<br>(6.136)   | -0.834**<br>(0.349) | -0.378<br>(6.583)   |                                      |             |               |             |               |             |
| TL spoken ALS      | -0.620<br>(0.627)                                | 12.87<br>(8.501)          | -0.509<br>(0.361)               | 13.42<br>(10.21)         | -1.147<br>(0.854)                    | 12.05*<br>(7.066)               | -0.943**<br>(0.422)      | 12.57*<br>(7.489)         | -1.275<br>(0.901)                                | 8.981<br>(7.640)    | -1.048**<br>(0.497) | 8.065<br>(8.898)    |                                      |             |               |             |               |             |
| PC at H&SCL        | -1.983<br>(1.218)                                | 1.706<br>(5.375)          | -2.040**<br>(0.887)             | 3.132<br>(6.774)         | -1.510*<br>(0.846)                   | -1.262<br>(4.242)               | -1.554*<br>(0.809)       | -2.236<br>(4.351)         | -0.864<br>(0.809)                                | 4.435<br>(4.110)    | -0.889<br>(0.819)   | 6.300<br>(4.583)    |                                      |             |               |             |               |             |
| PC at H/SCL        | 3.044**<br>(1.418)                               | 1.839<br>(10.05)          | 3.181**<br>(1.428)              | 2.562<br>(11.07)         | 2.884**<br>(1.244)                   | 2.824<br>(7.530)                | 3.015**<br>(1.267)       | 1.846<br>(8.624)          | 2.796*<br>(1.608)                                | 6.902<br>(7.891)    | 2.923*<br>(1.654)   | 10.21<br>(8.718)    |                                      |             |               |             |               |             |
| Male teacher       | -1.781<br>(2.588)                                | 9.223<br>(11.58)          | -1.756<br>(2.437)               | 8.693<br>(14.83)         | 0.151<br>(1.458)                     | 7.224<br>(11.85)                | 0.149<br>(1.428)         | 6.290<br>(11.86)          | 1.322<br>(1.581)                                 | -2.861<br>(11.68)   | 1.303<br>(1.409)    | -3.554<br>(11.03)   |                                      |             |               |             |               |             |
| T. Experience      | -0.748<br>(1.927)                                | 4.872<br>(16.40)          | -1.388<br>(1.674)               | 9.843<br>(20.82)         | -0.814<br>(1.567)                    | -0.108<br>(12.23)               | -1.511<br>(1.161)        | 1.723<br>(13.68)          | -0.108<br>(0.252)                                | -2.616<br>(11.53)   | -0.200<br>(0.463)   | -4.403<br>(12.92)   |                                      |             |               |             |               |             |
| T. Certificate!    | 0.0298<br>(0.189)                                | 16.85<br>(14.05)          | 0.0456<br>(0.191)               | 7.090<br>(14.45)         | 0.0269<br>(0.171)                    | 6.037<br>(8.665)                | 0.0412<br>(0.124)        | -3.644<br>(8.784)         | 0.0418<br>(0.335)                                | -13.26<br>(10.40)   | 0.0641<br>(0.152)   | -18.87*<br>(11.24)  |                                      |             |               |             |               |             |
| M SCL RCS          | -0.230<br>(0.608)                                | -3.913<br>(14.07)         | -0.303<br>(0.790)               | 1.162<br>(14.52)         | -0.325<br>(0.559)                    | -18.59*<br>(9.791)              | -0.429<br>(0.518)        | -19.03**<br>(9.285)       | -0.306<br>(1.128)                                | -18.89**<br>(9.593) | -0.403<br>(0.594)   | -19.30**<br>(8.624) |                                      |             |               |             |               |             |
| L SCL RSC          | -0.135<br>(0.563)                                | 2.107<br>(3.028)          | -0.0919<br>(0.179)              | 2.474<br>(3.609)         | -0.148<br>(1.324)                    | 0.687<br>(1.762)                | -0.101<br>(0.466)        | 0.544<br>(1.726)          | -0.139<br>(0.786)                                | 0.598<br>(1.355)    | -0.0948<br>(0.274)  | 0.867<br>(1.473)    |                                      |             |               |             |               |             |
| T. UNI Degree      | -1.292<br>(2.265)                                | 60.28<br>(320.3)          | -1.209<br>(2.174)               | 62.74<br>(322.9)         | 0.511<br>(2.223)                     | 51.32<br>(311.4)                | 0.478<br>(2.075)         | 58.90<br>(311.6)          | 2.819*<br>(1.596)                                | -46.61<br>(80.93)   | 2.637**<br>(1.262)  | -37.09<br>(80.96)   |                                      |             |               |             |               |             |
| COMMU.>50000       | 1.199<br>(1.141)                                 | -1.759<br>(8.154)         | 1.163<br>(1.008)                | -3.885<br>(8.891)        | 0.813<br>(1.106)                     | -0.185<br>(6.154)               | 0.789<br>(0.716)         | -3.402<br>(5.892)         | -0.340<br>(0.702)                                | 9.040<br>(6.457)    | -0.330<br>(0.607)   | 6.405<br>(6.462)    |                                      |             |               |             |               |             |
| Pov 50% Disadv     | 0.642<br>(2.047)                                 | 8.343<br>(7.529)          | 0.773<br>(1.034)                | 5.160<br>(10.10)         | 0.852<br>(1.999)                     | 10.61<br>(8.000)                | 1.025<br>(0.871)         | 8.492<br>(8.105)          | 0.500<br>(1.037)                                 | 13.70*<br>(7.758)   | 0.602<br>(0.563)    | 9.904<br>(7.279)    |                                      |             |               |             |               |             |
| Class size         | 3.034<br>(9.537)                                 | 101.5<br>(164.3)          | 2.770<br>(5.901)                | 122.2<br>(156.6)         | 3.696<br>(7.564)                     | 129.6<br>(220.4)                | 3.373<br>(6.032)         | 166.9<br>(283.0)          | -2.986<br>(4.069)                                | -132.1<br>(144.8)   | -2.725<br>(3.386)   | -132.7<br>(158.1)   |                                      |             |               |             |               |             |
| Class size sq      | -2.562<br>(8.866)                                | -66.02<br>(89.17)         | -2.517<br>(5.821)               | -77.36<br>(91.38)        | -2.976<br>(6.493)                    | -78.57<br>(119.2)               | -2.924<br>(5.663)        | -92.21<br>(152.1)         | 3.032<br>(3.661)                                 | 57.96<br>(79.45)    | 2.978<br>(3.205)    | 64.69<br>(85.75)    |                                      |             |               |             |               |             |
| Constant           |  | -158.0<br>(356.5)         |                                 | -172.9<br>(350.8)        |                                      | -172.5<br>(343.2)               |                          | -181.1<br>(349.6)         |  | 83.50<br>(129.9)    |                     | 76.37<br>(137.7)    |                                      |             |               |             |               |             |
| Total (Exp/Unexpl) | -4.731<br>(5.777)                                | -12.65<br>(9.289)         | -4.590<br>(3.395)               | -13.82<br>(8.840)        | -1.849<br>(4.895)                    | -12.52*<br>(7.077)              | -2.852<br>(3.106)        | -12.39<br>(7.622)         | 0.316<br>(4.273)                                 | -7.480<br>(6.595)   | 0.770<br>(3.083)    | 8.078<br>(6.851)    |                                      |             |               |             |               |             |
| Raw Gap            | Boys<br>248.7<br>(7.345)                         | Girls<br>266.1<br>(7.242) | Total Gap<br>-17.38*<br>(9.133) | Boys<br>384.8<br>(5.288) | Girls<br>399.2<br>(6.077)            | Total Gap<br>-14.37*<br>(7.599) | Boys<br>517.0<br>(5.725) | Girls<br>524.1<br>(4.614) | Total Gap<br>-7.164<br>(7.788)                   |                     |                     |                     |                                      |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included.

Table B. 17: Iran detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                             |                              |                                 | F(x) for Boys Reweighted to Girls |                             |                              |                                | Without reweighting<br>Boys are reference group |                             |                              |                               | F(x) for Boys Reweighted to Girls |             |               |             |               |             |
|---------------------|---|-----------------------------|------------------------------|---------------------------------|-----------------------------------|-----------------------------|------------------------------|--------------------------------|---|-----------------------------|------------------------------|-------------------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                   |                             | 50th quantile                |                                 | 90th quantile                     |                             | 10th quantile                |                                | 50th quantile                                   |                             | 90th quantile                |                               | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained                                       | Unexplained                 | Explained                    | Unexplained                     | Explained                         | Unexplained                 | Explained                    | Unexplained                    | Explained                                       | Unexplained                 | Explained                    | Unexplained                   | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.103<br>(0.309)                                | -5.986<br>(5.655)           | 0.173<br>(0.218)             | -4.498<br>(5.119)               | -0.0150<br>(0.0716)               | -3.118<br>(3.164)           | -0.0251<br>(0.106)           | -3.319<br>(3.333)              | 0.0322<br>(0.185)                               | -1.780<br>(3.434)           | 0.0539<br>(0.123)            | -1.961<br>(3.560)             |                                   |             |               |             |               |             |
| Upper-sec           | -0.0944<br>(0.600)                              | -1.265<br>(4.183)           | -0.0866<br>(0.555)           | -2.302<br>(4.590)               | -0.792*<br>(0.479)                | -0.314<br>(2.422)           | -0.727**<br>(0.354)          | -0.701<br>(2.663)              | -1.178*<br>(0.633)                              | 5.211<br>(3.516)            | -1.081**<br>(0.526)          | 4.144<br>(3.701)              |                                   |             |               |             |               |             |
| Post-sec not UNI    | 0.0867<br>(0.258)                               | -0.672<br>(1.713)           | 0.0962<br>(0.291)            | -1.195<br>(2.397)               | 0.253<br>(0.300)                  | -1.177<br>(1.718)           | 0.280<br>(0.273)             | -1.642<br>(2.011)              | 0.585<br>(0.822)                                | 3.465<br>(2.365)            | 0.649*<br>(0.354)            | 3.154<br>(2.452)              |                                   |             |               |             |               |             |
| University degree   | 0.0303<br>(0.348)                               | -0.966<br>(2.701)           | -0.00127<br>(0.0676)         | -1.129<br>(2.982)               | -0.124<br>(0.334)                 | -2.119<br>(1.901)           | 0.00520<br>(0.0714)          | -2.372<br>(1.938)              | -0.533<br>(1.601)                               | 2.151<br>(3.317)            | 0.0224<br>(0.336)            | 2.167<br>(3.384)              |                                   |             |               |             |               |             |
| Native parents      | -0.592<br>(0.584)                               | 37.94<br>(32.16)            | -0.635*<br>(0.362)           | 40.78<br>(30.96)                | -0.454<br>(0.282)                 | 47.16**<br>(22.25)          | -0.487**<br>(0.196)          | 49.15**<br>(22.31)             | -0.357<br>(0.220)                               | 4.069<br>(19.07)            | -0.383***<br>(0.118)         | 4.496<br>(19.43)              |                                   |             |               |             |               |             |
| One bookcases       | 0.00859<br>(0.0564)                             | -1.917<br>(1.721)           | 0.0176<br>(0.0816)           | -1.807<br>(1.684)               | 0.0931<br>(0.476)                 | 0.458<br>(1.965)            | 0.191*<br>(0.106)            | 0.098<br>(2.100)               | 0.168<br>(1.010)                                | 3.141<br>(3.086)            | 0.344*<br>(0.179)            | 3.609<br>(3.409)              |                                   |             |               |             |               |             |
| Two bookcases       | 0.259<br>(0.483)                                | -2.636<br>(1.945)           | 0.265<br>(0.414)             | -2.832<br>(1.947)               | -0.0652<br>(0.293)                | -2.068<br>(2.029)           | -0.0667<br>(0.281)           | -1.491<br>(2.141)              | -0.226<br>(0.437)                               | -3.189<br>(3.299)           | -0.231<br>(0.443)            | -2.371<br>(3.347)             |                                   |             |               |             |               |             |
| Home possess H      | 0.0315<br>(0.231)                               | 1.754<br>(5.245)            | 0.0374<br>(0.112)            | 4.327<br>(4.948)                | 0.0859<br>(1.110)                 | 2.265<br>(6.136)            | 0.102<br>(0.248)             | 3.285<br>(6.201)               | 0.165<br>(1.592)                                | 6.945<br>(7.033)            | 0.196<br>(0.342)             | 5.35<br>(7.386)               |                                   |             |               |             |               |             |
| Home possess M      | -0.504<br>(0.666)                               | 3.877<br>(5.950)            | -0.532<br>(0.420)            | 4.64<br>(6.615)                 | -0.432<br>(0.432)                 | 5.145<br>(4.116)            | -0.455**<br>(0.204)          | 5.949<br>(4.300)               | -0.362<br>(0.450)                               | 6.252<br>(4.739)            | -0.382<br>(0.289)            | 5.945<br>(4.678)              |                                   |             |               |             |               |             |
| TL spoken ALs       | -1.924<br>(1.352)                               | 3.953<br>(7.766)            | -2.130***<br>(0.823)         | 6.66<br>(7.761)                 | -1.685<br>(1.510)                 | 0.900<br>(7.220)            | -1.866*<br>(1.027)           | 0.922<br>(6.699)               | -0.270<br>(1.152)                               | -6.408<br>(8.495)           | -0.299<br>(1.241)            | -6.324<br>(7.919)             |                                   |             |               |             |               |             |
| PC at H&SCL         | -0.226<br>(0.739)                               | -0.164<br>(0.983)           | -0.320<br>(0.230)            | -0.0633<br>(0.986)              | -0.440<br>(0.847)                 | 0.661<br>(1.671)            | -0.622*<br>(0.338)           | 0.567<br>(1.684)               | -1.299<br>(2.881)                               | -3.243<br>(5.222)           | -1.838**<br>(0.740)          | -4.302<br>(5.676)             |                                   |             |               |             |               |             |
| PC at H/SCL         | 0.213<br>(0.773)                                | -1.595<br>(4.719)           | 0.254<br>(0.338)             | -2.398<br>(4.274)               | 0.255<br>(0.510)                  | 1.265<br>(5.406)            | 0.305<br>(0.321)             | 0.696<br>(5.612)               | 0.0554<br>(0.229)                               | -6.866<br>(5.877)           | 0.0662<br>(0.281)            | -7.533<br>(6.532)             |                                   |             |               |             |               |             |
| Male teacher        |   |                             |                              |                                 |                                   |                             |                              |                                |   |                             |                              |                               |                                   |             |               |             |               |             |
| T. Experience       |   |                             |                              |                                 |                                   |                             |                              |                                |   |                             |                              |                               |                                   |             |               |             |               |             |
| T. Certificate!     |   |                             |                              |                                 |                                   |                             |                              |                                |   |                             |                              |                               |                                   |             |               |             |               |             |
| M SCL RCS           | -0.282<br>(1.555)                               | -8.125<br>(11.15)           | 0.104<br>(0.334)             | -7.024<br>(10.32)               | -0.366<br>(1.527)                 | -7.731<br>(12.18)           | 0.135<br>(0.305)             | -10.98<br>(12.55)              | -0.728<br>(3.868)                               | -28.24<br>(30.53)           | 0.268<br>(0.825)             | -14.06<br>(27.98)             |                                   |             |               |             |               |             |
| L SCL RSC           | 0.0805<br>(2.783)                               | -8.302*<br>(4.567)          | -0.382<br>(0.627)            | -9.283**<br>(4.308)             | 0.0640<br>(2.104)                 | -4.688<br>(4.396)           | -0.304<br>(0.433)            | -5.736<br>(4.329)              | 0.0641<br>(2.989)                               | -5.899<br>(7.901)           | -0.304<br>(0.687)            | -3.598<br>(7.636)             |                                   |             |               |             |               |             |
| T. UNI Degree       |   |                             |                              |                                 |                                   |                             |                              |                                |   |                             |                              |                               |                                   |             |               |             |               |             |
| COMMU.>50000        | -0.0921<br>(0.475)                              | -20.40**<br>(9.927)         | -0.0910<br>(0.215)           | -22.18**<br>(9.487)             | 0.216<br>(1.420)                  | -3.876<br>(8.360)           | 0.214<br>(0.363)             | -3.753<br>(9.155)              | 0.346<br>(2.290)                                | 3.776<br>(8.998)            | 0.342<br>(0.622)             | 1.868<br>(8.290)              |                                   |             |               |             |               |             |
| Pov 50% Disadv      | -1.909<br>(1.694)                               | -3.017<br>(7.423)           | -1.456<br>(1.216)            | -2.409<br>(7.612)               | -2.026<br>(1.664)                 | -2.018<br>(5.740)           | -1.545*<br>(0.933)           | -0.883<br>(5.819)              | -1.485<br>(2.004)                               | -5.816<br>(8.959)           | -1.132<br>(1.279)            | -3.788<br>(7.777)             |                                   |             |               |             |               |             |
| Class size          | 12.22<br>(11.23)                                | 223.8<br>(209.4)            | 9.868<br>(7.417)             | 156<br>(195.4)                  | 2.997<br>(5.691)                  | 144.7<br>(142.9)            | 2.419<br>(4.744)             | 66.39<br>(131.1)               | -1.984<br>(7.115)                               | 246.1<br>(181.7)            | -1.601<br>(6.159)            | 243.4<br>(154.4)              |                                   |             |               |             |               |             |
| Class size sq       | -8.207<br>(8.729)                               | -92.26<br>(109.6)           | -7.207<br>(6.101)            | -51.7<br>(102.0)                | -1.922<br>(4.578)                 | -72.25<br>(74.49)           | -1.688<br>(4.183)            | -29.85<br>(68.51)              | 0.692<br>(5.413)                                | -154.2<br>(99.48)           | 0.607<br>(5.176)             | -147.2*<br>(89.06)            |                                   |             |               |             |               |             |
| Constant            |   | -138.9<br>(90.76)           |                              | -118.9<br>(84.82)               |                                   | -105.5<br>(75.59)           |                              | -68.87<br>(70.55)              |   | -57.32<br>(96.59)           |                              | -75.88<br>(79.53)             |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | -0.301<br>(6.168)                               | -15.94**<br>(7.344)         | -2.966<br>(2.661)            | -15.33**<br>(7.668)             | -6.837<br>(7.109)                 | 0.148<br>(6.991)            | -4.477**<br>(2.049)          | 1.336<br>(6.818)               | -10.42<br>(11.65)                               | 12.89<br>(10.54)            | -4.741<br>(3.156)            | 11.92<br>(9.614)              |                                   |             |               |             |               |             |
| Raw Gap             |   | Boys<br>287.5***<br>(7.344) | Girls<br>303.7***<br>(5.504) | Total Gap<br>-16.24*<br>(9.314) |                                   | Boys<br>397.8***<br>(6.456) | Girls<br>404.5***<br>(5.387) | Total Gap<br>-6.689<br>(8.398) |   | Boys<br>517.4***<br>(9.796) | Girls<br>514.9***<br>(10.17) | Total Gap<br>2.475<br>(14.02) |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included

Table B. 18: Saudi Arabia detailed decomposition of maths test scores by gender (boys as reference)

| VARIABLES           | Without reweighting<br>Boys are reference group |                              |                                   |                      | F(x) for Boys Reweighted to Girls |                              |                                   |                      | Without reweighting<br>Boys are reference group |                              |                                 |                   | F(x) for Boys Reweighted to Girls |             |               |             |               |             |
|---------------------|---|------------------------------|-----------------------------------|----------------------|-----------------------------------|------------------------------|-----------------------------------|----------------------|---|------------------------------|---------------------------------|-------------------|-----------------------------------|-------------|---------------|-------------|---------------|-------------|
|                     | 10th quantile                                   |                              | 50th quantile                     |                      | 90th quantile                     |                              | 10th quantile                     |                      | 50th quantile                                   |                              | 90th quantile                   |                   | 10th quantile                     |             | 50th quantile |             | 90th quantile |             |
|                     | Explained                                       | Unexplained                  | Explained                         | Unexplained          | Explained                         | Unexplained                  | Explained                         | Unexplained          | Explained                                       | Unexplained                  | Explained                       | Unexplained       | Explained                         | Unexplained | Explained     | Unexplained | Explained     | Unexplained |
| Lower-sec EDC       | 0.265<br>(0.328)                                | -2.158<br>(3.229)            | 0.223<br>(0.277)                  | 0.406<br>(2.772)     | 0.140<br>(0.278)                  | -4.171*<br>(2.409)           | 0.118<br>(0.217)                  | -3.506<br>(2.602)    | 0.161<br>(0.361)                                | -3.654<br>(3.003)            | 0.135<br>(0.244)                | -3.75<br>(3.886)  |                                   |             |               |             |               |             |
| Upper-sec           | 0.0755<br>(0.254)                               | -2.121<br>(4.059)            | 0.0808<br>(0.233)                 | -1.166<br>(5.522)    | 0.211<br>(0.268)                  | -4.055<br>(2.654)            | 0.226<br>(0.301)                  | -3.477<br>(3.186)    | 0.353<br>(0.439)                                | -3.611<br>(3.426)            | 0.378<br>(0.409)                | -4.927<br>(3.906) |                                   |             |               |             |               |             |
| Post-sec not UNI    | -0.0647<br>(0.232)                              | -0.0184<br>(1.127)           | -0.0214<br>(0.0987)               | 0.873<br>(1.220)     | -0.275<br>(0.299)                 | 0.345<br>(1.036)             | -0.0911<br>(0.140)                | 0.286<br>(1.195)     | -0.0972<br>(0.270)                              | -0.0917<br>(1.453)           | -0.0322<br>(0.109)              | 0.0501<br>(1.665) |                                   |             |               |             |               |             |
| University degree   | -0.0384<br>(0.148)                              | -2.147<br>(5.461)            | -0.0517<br>(0.184)                | 2.059<br>(8.656)     | -0.114<br>(0.173)                 | -6.393<br>(3.941)            | -0.153<br>(0.178)                 | -5.107<br>(4.103)    | -0.198<br>(0.501)                               | -6.024<br>(6.516)            | -0.266<br>(0.367)               | -8.36<br>(7.411)  |                                   |             |               |             |               |             |
| Native parents      | 0.114<br>(0.549)                                | -0.595<br>(10.69)            | 0.0963<br>(0.444)                 | -2.848<br>(12.53)    | 0.322<br>(0.433)                  | 6.632<br>(7.391)             | 0.271<br>(0.361)                  | 3.681<br>(8.664)     | 1.319<br>(1.007)                                | -5.324<br>(12.50)            | 1.110*<br>(0.572)               | -10.61<br>(14.45) |                                   |             |               |             |               |             |
| One bookcases       | -0.805<br>(1.097)                               | 1.956<br>(5.315)             | -0.704<br>(0.944)                 | -2.141<br>(5.095)    | -1.635<br>(1.014)                 | 0.701<br>(3.619)             | -1.431*<br>(0.806)                | -0.151<br>(3.913)    | -2.691<br>(1.683)                               | 5.451<br>(5.522)             | -2.355*<br>(1.405)              | 4.748<br>(5.125)  |                                   |             |               |             |               |             |
| Two bookcases       | 0.175<br>(0.811)                                | -0.724<br>(3.411)            | 0.153<br>(0.667)                  | -2.526<br>(3.345)    | -0.365<br>(0.527)                 | -0.693<br>(2.528)            | -0.319<br>(0.448)                 | -1.099<br>(2.889)    | -1.247<br>(0.978)                               | 0.127<br>(3.604)             | -1.091<br>(0.750)               | -0.764<br>(3.779) |                                   |             |               |             |               |             |
| Home possess H      | -8.230***<br>(3.098)                            | 17.32<br>(16.04)             | -8.311***<br>(2.349)              | 14.71<br>(18.94)     | -6.902***<br>(1.709)              | 11.98<br>(9.616)             | -6.969***<br>(1.249)              | 8.774<br>(11.01)     | -5.157**<br>(2.119)                             | 8.488<br>(9.249)             | -5.207***<br>(1.664)            | 3.638<br>(7.531)  |                                   |             |               |             |               |             |
| Home possess M      | 0.783<br>(1.111)                                | 15.57<br>(9.543)             | 0.934<br>(0.618)                  | 12.61<br>(12.95)     | 0.464<br>(0.546)                  | 6.334<br>(8.193)             | 0.554*<br>(0.288)                 | 3.265<br>(9.838)     | 0.166<br>(0.301)                                | 2.606<br>(5.350)             | 0.198<br>(0.199)                | 1.246<br>(4.974)  |                                   |             |               |             |               |             |
| TL spoken ALs       | -0.316<br>(1.088)                               | 2.948<br>(5.715)             | -0.279<br>(0.968)                 | 9.945<br>(7.252)     | -0.662<br>(1.096)                 | -1.692<br>(5.798)            | -0.585<br>(0.973)                 | -1.229<br>(7.094)    | -1.396<br>(1.141)                               | -4.268<br>(7.341)            | -1.233<br>(0.929)               | -2.661<br>(6.949) |                                   |             |               |             |               |             |
| PC at H&SCL         | -4.877***<br>(1.650)                            | -1.403<br>(1.814)            | -4.498***<br>(1.482)              | -0.47<br>(2.153)     | -3.174*<br>(1.663)                | -0.748<br>(1.473)            | -2.927**<br>(1.468)               | -0.587<br>(1.451)    | -0.747<br>(2.122)                               | 0.894<br>(1.564)             | -0.689<br>(1.939)               | 1.286<br>(1.884)  |                                   |             |               |             |               |             |
| PC at H/SCL         | 3.230***<br>(1.181)                             | -10.95<br>(10.05)            | 2.603***<br>(0.846)               | -9.574<br>(13.82)    | 2.369**<br>(1.051)                | -2.216<br>(6.393)            | 1.909**<br>(0.835)                | -0.673<br>(6.714)    | -0.492<br>(1.650)                               | 10.01<br>(9.239)             | -0.397<br>(1.333)               | 15.15<br>(9.898)  |                                   |             |               |             |               |             |
| Male teacher        |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
| T. Experience       |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
| T. Certificate!     |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
| M SCL RCS           | -0.147<br>(0.515)                               | 17.58<br>(15.40)             | -0.244<br>(0.944)                 | 15.22<br>(16.52)     | -0.219<br>(0.537)                 | 33.97**<br>(13.62)           | -0.364<br>(0.882)                 | 30.43**<br>(14.15)   | 0.429<br>(0.704)                                | 21.05<br>(21.20)             | 0.710<br>(1.232)                | 8.545<br>(26.38)  |                                   |             |               |             |               |             |
| L SCL RSC           | 0.768<br>(1.972)                                | 2.029<br>(5.542)             | 0.266<br>(0.598)                  | 1.842<br>(6.175)     | 0.702<br>(1.688)                  | 4.766<br>(4.762)             | 0.243<br>(0.509)                  | 2.958<br>(4.272)     | 1.449<br>(2.135)                                | 2.197<br>(5.710)             | 0.501<br>(0.631)                | -1.053<br>(6.870) |                                   |             |               |             |               |             |
| T. UNI Degree       |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
| COMMU.>50000        | -0.327<br>(1.440)                               | 0.0542<br>(6.940)            | -0.382<br>(0.703)                 | 2.4<br>(9.577)       | -0.365<br>(1.445)                 | -1.515<br>(5.527)            | -0.426<br>(0.675)                 | -3.688<br>(5.949)    | -0.640<br>(2.047)                               | 2.262<br>(6.933)             | -0.747<br>(0.845)               | -2.874<br>(8.264) |                                   |             |               |             |               |             |
| Pov 50% Disadv      | 0.0629<br>(0.276)                               | -0.230<br>(2.924)            | 0.0510<br>(0.210)                 | -0.0192<br>(2.887)   | 0.279<br>(0.868)                  | -2.665<br>(2.763)            | 0.226<br>(0.306)                  | -3.155<br>(2.665)    | 0.0919<br>(0.238)                               | -1.209<br>(2.486)            | 0.0745<br>(0.194)               | -2.089<br>(2.138) |                                   |             |               |             |               |             |
| Class size          | -0.195<br>(2.926)                               | 26.77<br>(77.35)             | -0.0318<br>(0.530)                | 49.75<br>(95.21)     | -0.995<br>(2.794)                 | 48.91<br>(54.48)             | -0.162<br>(0.738)                 | 56.89<br>(51.64)     | 0.288<br>(2.458)                                | 19.10<br>(48.16)             | 0.0470<br>(0.543)               | 54.06<br>(71.06)  |                                   |             |               |             |               |             |
| Class size sq       | 1.706<br>(10.49)                                | -15.49<br>(40.75)            | 0.408<br>(2.322)                  | -32.16<br>(47.43)    | 5.580<br>(6.816)                  | -31.47<br>(27.06)            | 1.334<br>(1.423)                  | -36.48<br>(27.87)    | 0.378<br>(7.285)                                | -10.24<br>(25.80)            | 0.0904<br>(1.727)               | -26.63<br>(38.78) |                                   |             |               |             |               |             |
| Constant            |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
| Total (Expl/Unexpl) | -6.703<br>(9.462)                               | -27.18***<br>(9.810)         | -8.711**<br>(4.187)               | -33.70***<br>(11.25) | -3.853<br>(6.248)                 | -20.42***<br>(6.960)         | -7.853***<br>(2.676)              | -22.78***<br>(7.109) | -5.601<br>(7.068)                               | -5.601<br>(7.068)            | -7.890***<br>(3.023)            | -7.794<br>(8.031) |                                   |             |               |             |               |             |
| Raw Gap             |   |                              |                                   |                      |                                   |                              |                                   |                      |   |                              |                                 |                   |                                   |             |               |             |               |             |
|                     | Boys<br>216.9***<br>(5.569)                     | Girls<br>250.8***<br>(5.555) | Total Gap<br>-33.88***<br>(7.671) |                      | Boys<br>317.7***<br>(5.359)       | Girls<br>342.0***<br>(4.030) | Total Gap<br>-24.27***<br>(7.012) |                      | Boys<br>423.5***<br>(4.361)                     | Girls<br>434.1***<br>(3.902) | Total Gap<br>-10.55*<br>(5.760) |                   |                                   |             |               |             |               |             |

Jackknife Standard errors in parentheses, \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Dummy controls for missing observations included