Worked with Brandon Fong and Leslie Ton for the graph part.

1. Read the introduction (first 4 pages) of *Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya* by Duflo, Dupas and Kremer (DDK).

a) Student ability tracking can **hurt** low ability students because the civil service teachers at Kenya are more incentivized based on the scores of their students on the national primary school exit exam given at the end of eighth grade. With the fact that students drop before this exit exam, teachers decide to shift their focus on the students at the top of the distribution.
b) Student ability tracking can **benefit** low ability students by allowing teachers to make adjustments that help match instruction based on each students' needs. Evidently, student ability tracking benefits both low ability and high ability students.

2. Comparing Group Means: Fill in the blank table below, reporting both the appropriate subgroup averages and the difference(s) between the treatment (tracking=1) and control (tracking=0) group averages. NOTE: this homework uses data from only students of regular, civil service teachers, you can ignore the discussion of contract teachers in the paper.

c) Although, the average effect of ability tracking on test scores for the full sample was slightly higher for the treatment group compared to the controlled group, the treatment group still ended with a negative tracking. On average, tracking helped improve test scores because when comparing the differences for each row, there was a positive correlation, thus we can conclude that tracking has helped improve test scores even within a slight manner.

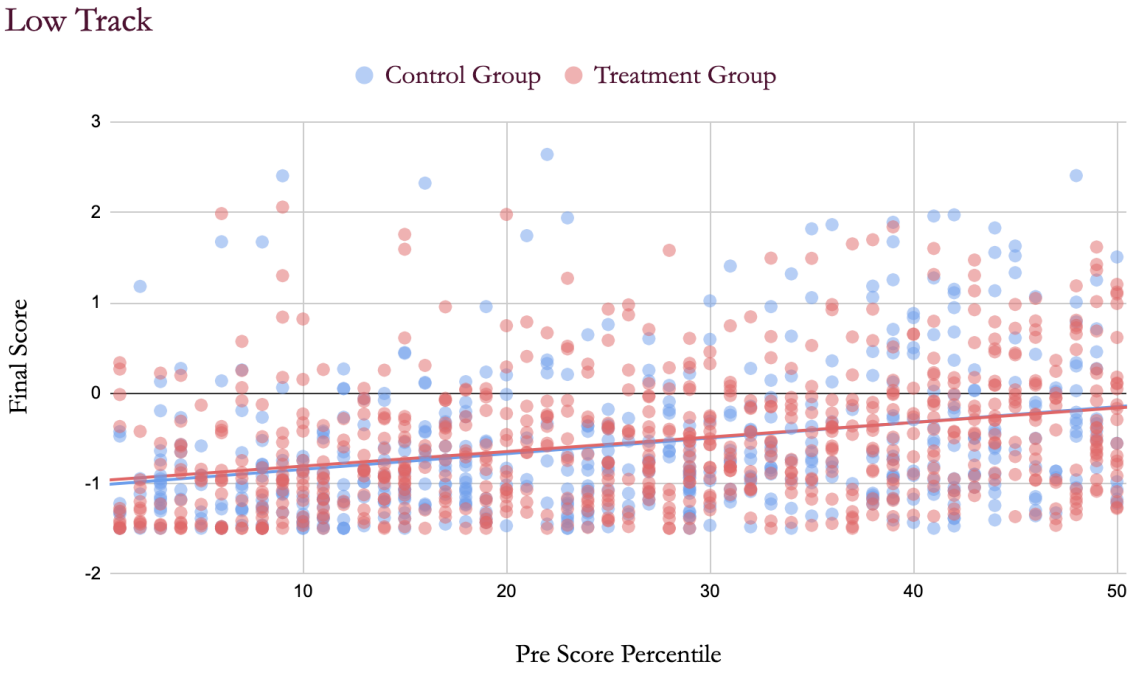
d) Given your results in Table 1, did High or Low track students as a group improve more under tracking? Why could that be? To answer, write 2-3 sentences on how some part of theoretical test score production function can help explain why this group did well.

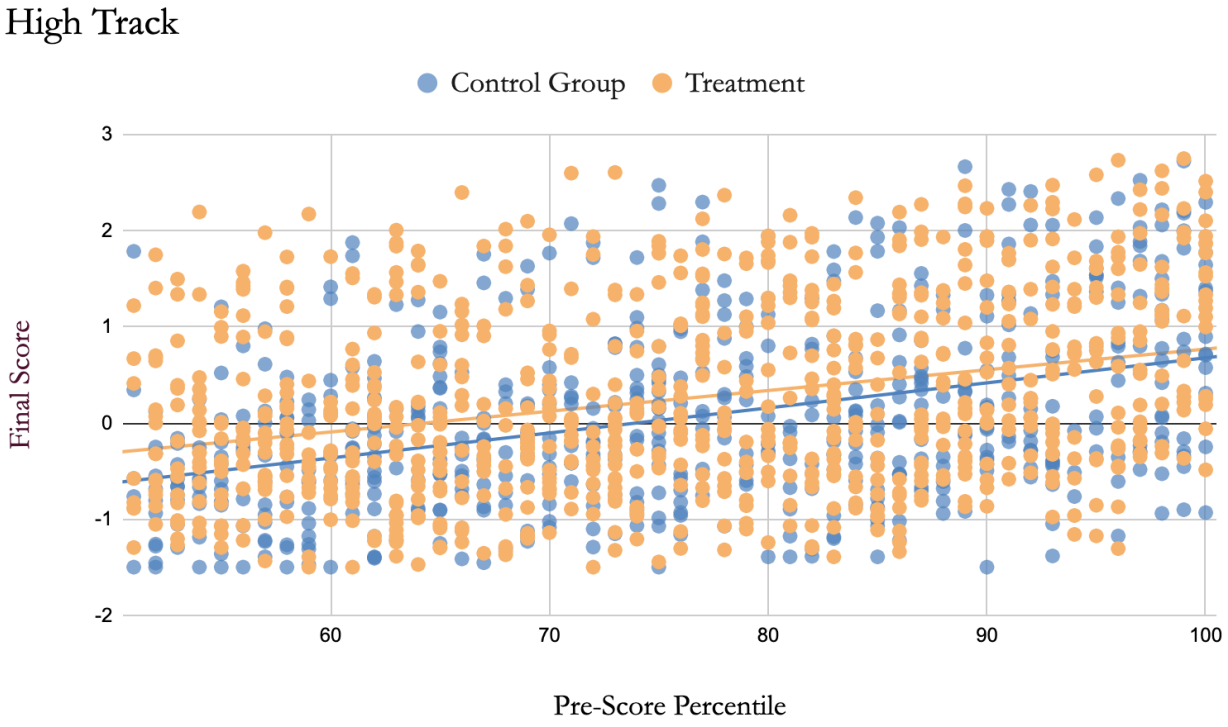
Based on the data, it is evident that high track students improved more under tracking. This could be due to the fact that teachers are more incentivized with helping students with higher test scores so they decide not to focus on the students under the 50th percentile. The theoretical test score production focuses on 3 parts: Direct Peer Effects, Teacher Effort Effects and Teacher Targeting Effects. One part that can be more correlated than other parts of this function could be due to "Direct peer effects". Since we have split up the groups between upper and lower percentiles, I believe that the direct peer effect may have a greater effect on the high track compared to the low track. Subsequently, the direct peer effect may have a more influential effect in the high track because of the pressures to maintain good test scores for school as well as the

general notion that studious students are usually associated with other studious students.

3. Graphing

e) Generate two scatter plots, one for “low track” (Figure 1) and one for “high track” (Figure 2), with pre-score on the X-axis (0-50 for low track; 50-100 for high track) and test-score on the Y-axis, using different colored symbols for the treatment and control group students in each graph. Add 2 “best fit lines” to each graph, one for treatment group and one for control – excel has an option to do this automatically.





f) At each ability level, as defined by pre-score, what is the vertical difference between the treatment and control group best-fit lines telling you about the effects of tracking? Within each track, is the treatment effect the same across pre-score (meaning do the best and worst kids on pre-score within the low track experience different treatment effects? In the high track?)

The vertical difference between the treatment and control group best-fit lines tell us the effectiveness of student ability tracking. If the 2 best-fit lines are close to each other, it means that there is not much difference between the control group and treatment group, which can be seen in the low track graph. However, seen in the high track graph, the 2 best-fit lines are much more distant, with the treatment group starting off higher the the control group. We can conclude that student tracking is more effective with students in the higher percentile compared to the lower percentile. The treatment effect seen in the low track experience seems to be much more similar than the treatment effect seen in the high track experience. Since the 2 lines of best-fit in the low track experience are nearly adjacent to each other, we can conclude that these students most likely experience the same treatment. In comparison, students in the high track seem to have different experiences based on the larger differential of the 2 best-fit lines, concluding that

students in the higher percentile seem to experience different treatment than their peers in the lower percentile.

Sub-group	Treatment	Control	Difference
(1) Full sample	-0.1115047779	-0.2383084367	0.1268036587
(2) High Ability	0.2488562745	0.05049927549	0.198356999
(3) Low Ability	-0.5360811767	-0.5596922124	0.0236110357