Does performance explain the gender wage gap?

The firm measures associate performance with two numeric metrics: billable hours and revenue brought in by new clients. In this exercise we use billable hours only. Billable hours are important to the firm because they provide a source of revenue. However, not all work hours can be billed to clients, so even an associate working 80 hours a week may have no or few billable hours that week.

Your task is to explore whether differences in billable hours explain differences in pay.

Task: Demonstrate pay practices at the firm

You will use a regression to uncover the actual pay practices at the firm. Because your pay policy varies by department and depends on billable hours, you will *control for* these two factors.

1. Find the data table holding performance measures of male and female associates hired in 2012. Start with `DATA B` and use operation `J1` to find the corresponding table that also has billable hours.
2. Using "select rows" operations and the "summarize hours" operation, explore whether men and women bill different amount of hours. Can you reject the null hypothesis that mean billable hours are the same for men and women? Use the Spreadsheet to compute the p-value. What do you learn from the histogram?
3. Estimate a regression of salary on billable hours and departments, using operation `R2`. The result is a `MODEL` card, listing the estimated parameters of the model. They are reported in percentage difference in salary, holding all other variables constant. Interpret the coefficients.
4. Use the resulting `MODEL` card on the *same data card* on which you estimated the model. For example, if your model is `1X`, and in the hole you see 5, take the card `1X5` as the result. This will evaluate the fit of your model *in sample*. Note the scatterplot and the R^2 indicator.
5. (optional, if time permits) Re-estimate the regression, now also conditioning on the gender of the associates (`OPERATION R1`). How do the estimated coefficients change relative to the previous model? How does the fit change?

Presentation and discussion

Can you argue that the gender-neutral regression model of salaries fits the data well? Pick the exhibits that best support your case. Prepare a short presentation with 2-4 exhibits and precise verbal interpretation.