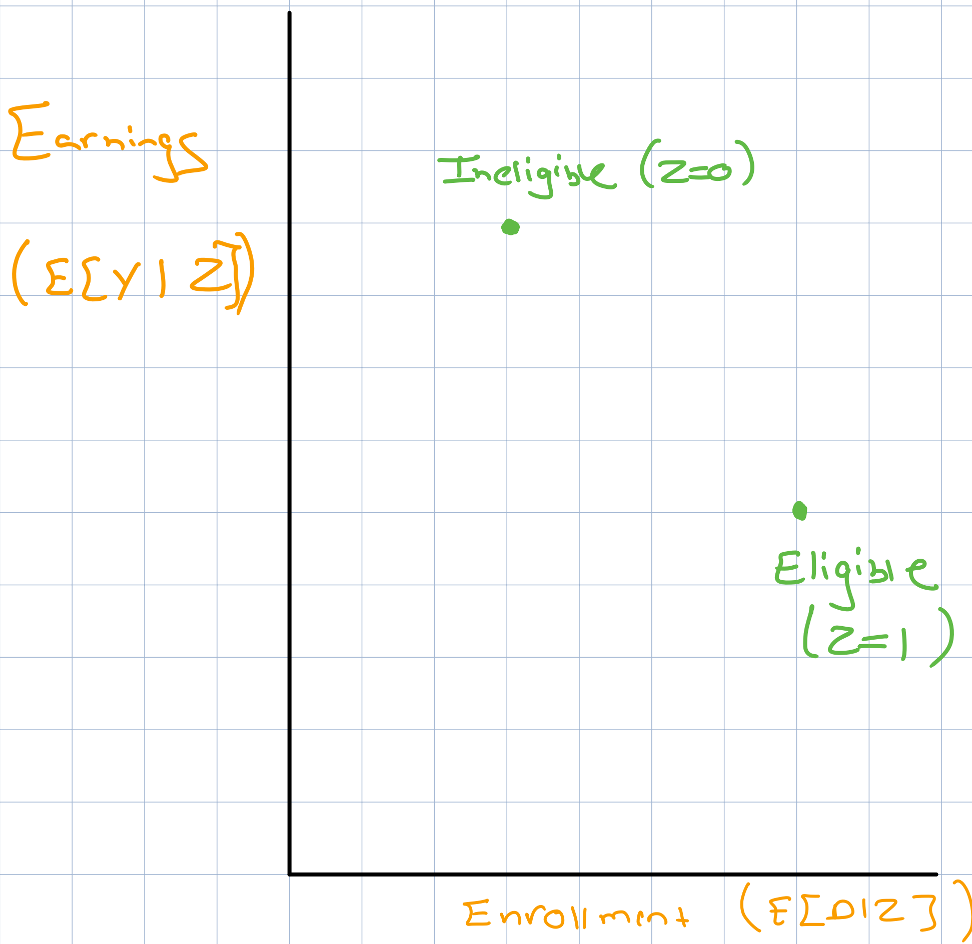
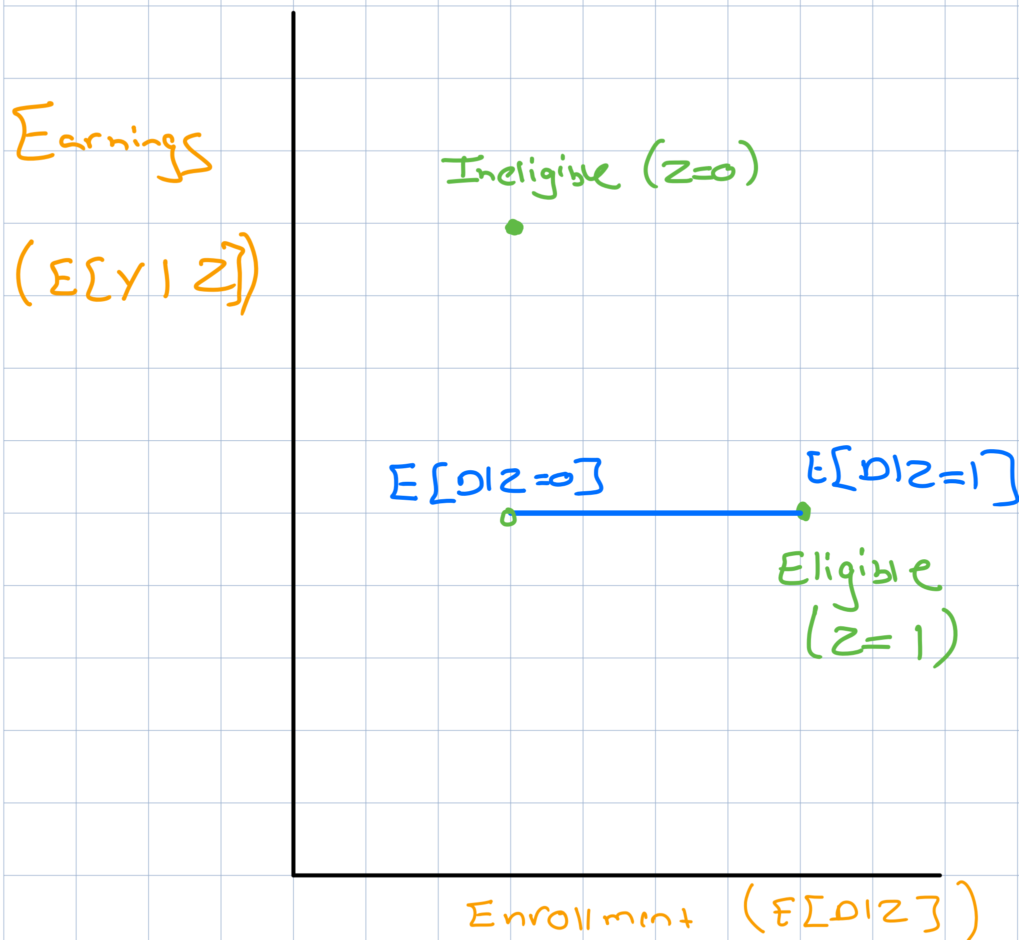
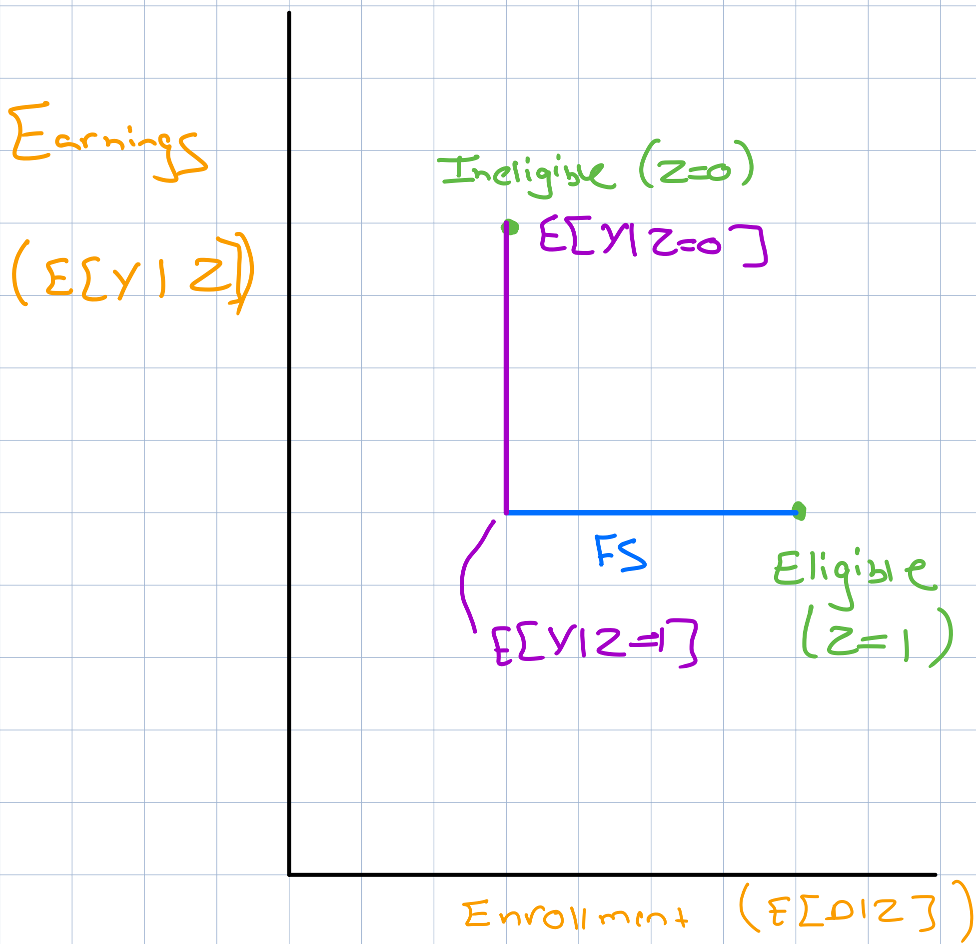


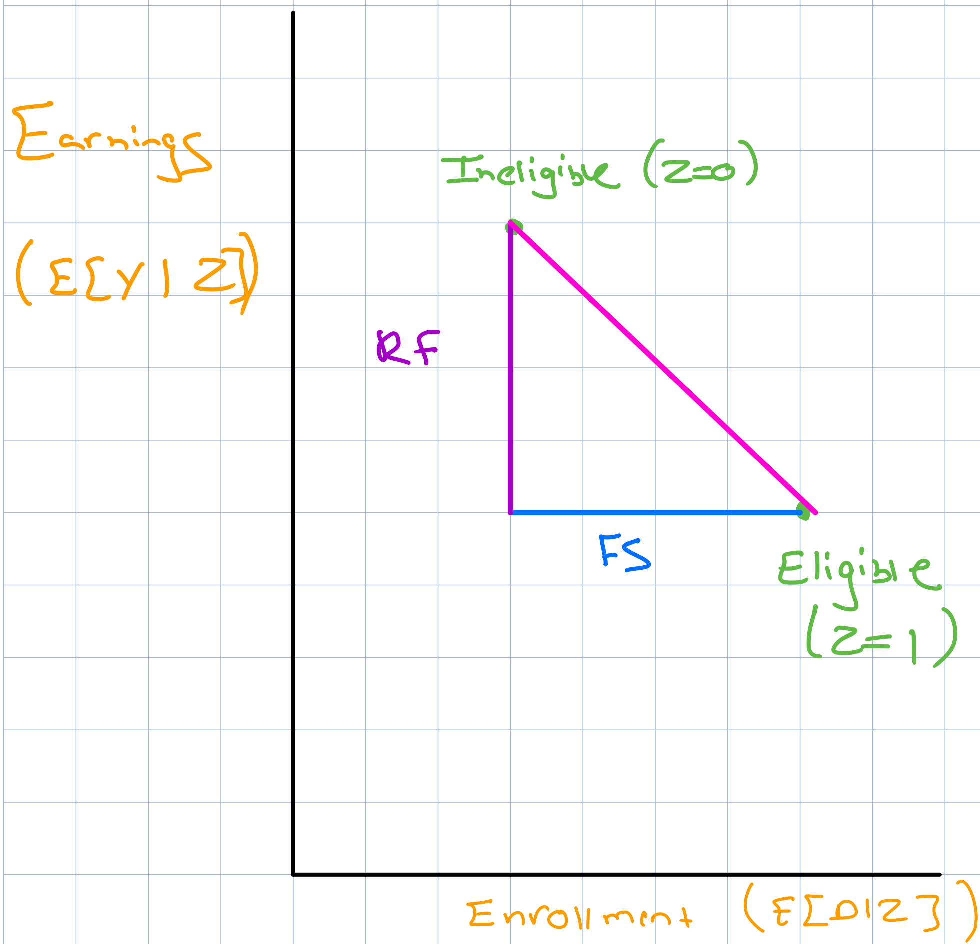
We can visualize identification of LATE in the 2D plane.



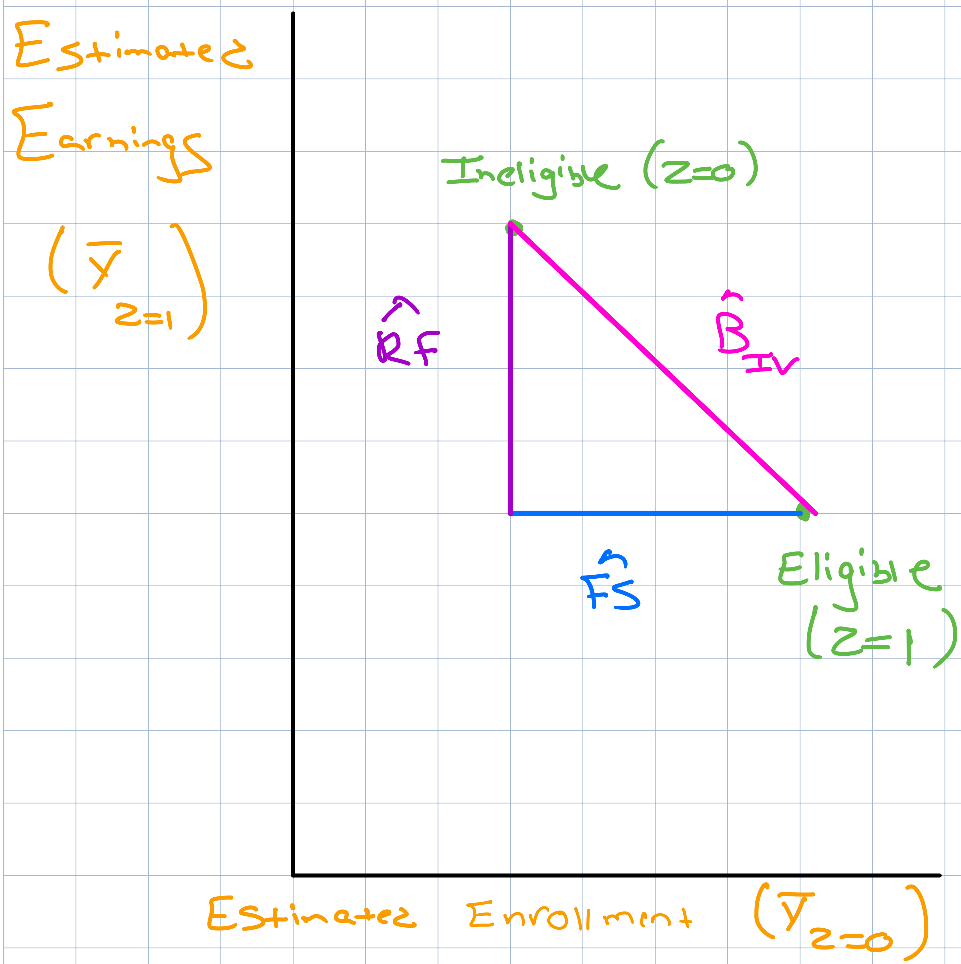
Length of the blue line is the first stage



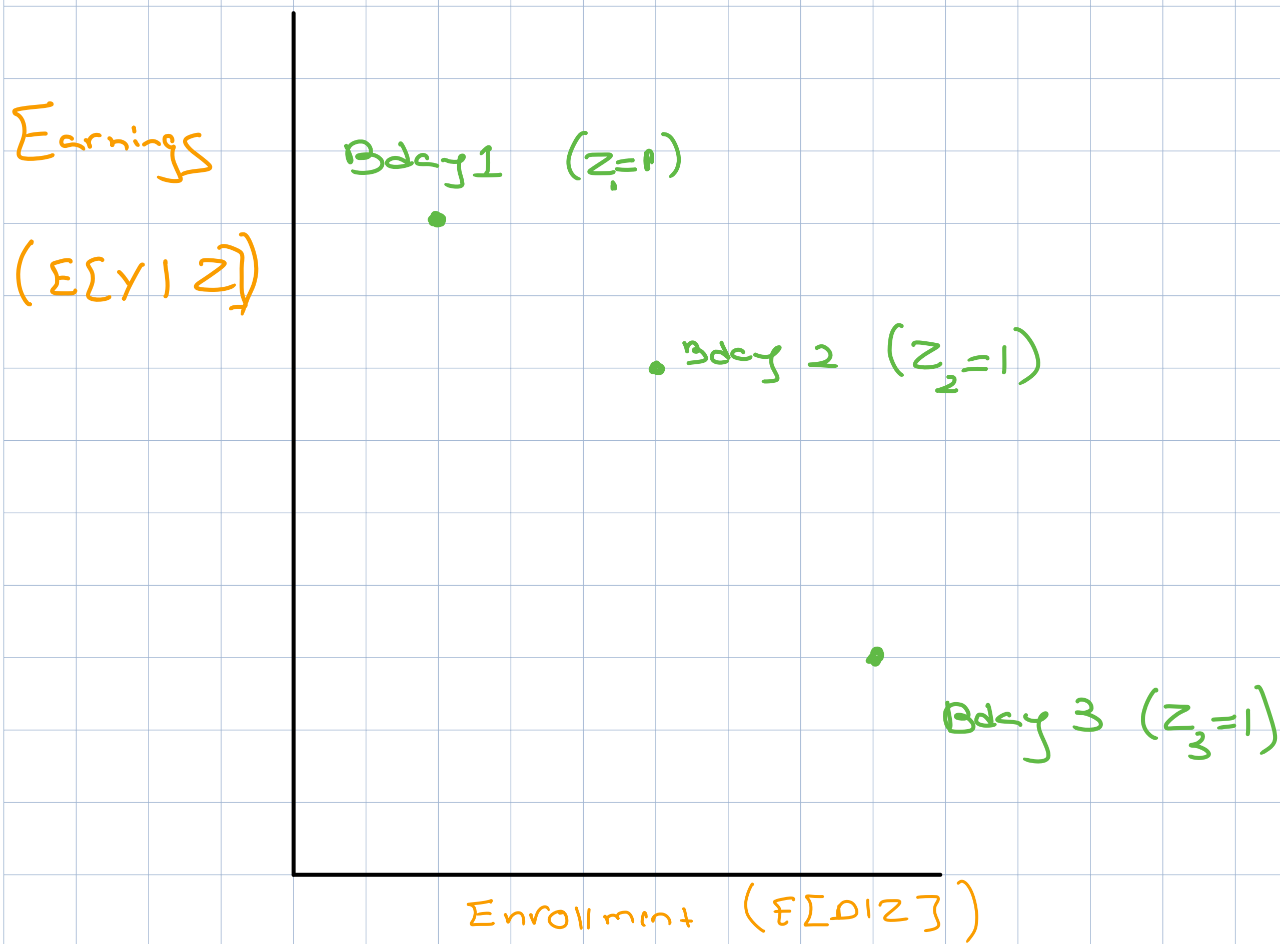
Length of the purple line is the reduced form



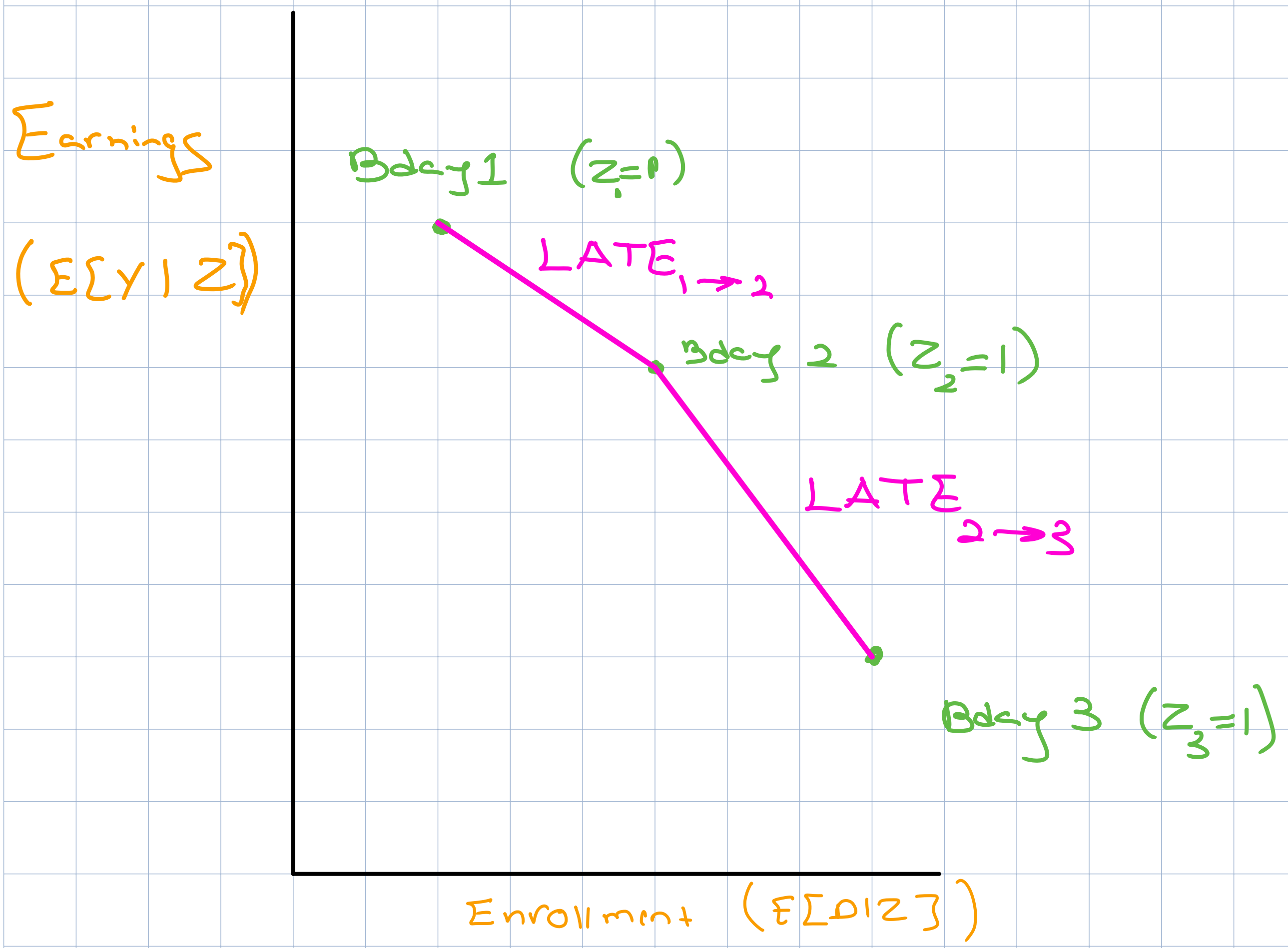
Slope of the pink line is $\frac{RF}{FS} = LATE$



The 2SLS estimator uses sample analogs

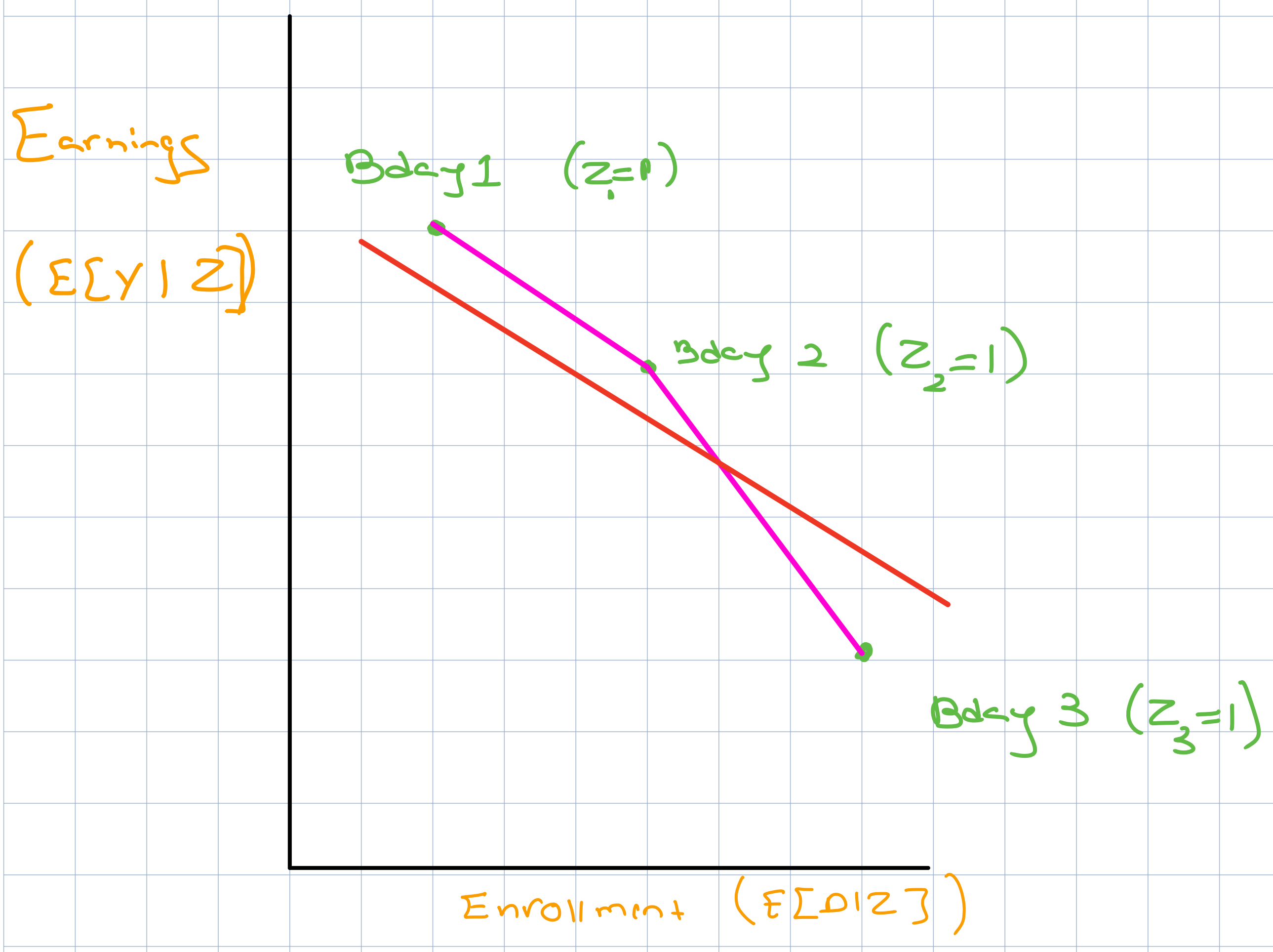


In practice, we have many birthdays with different earnings & enrollment

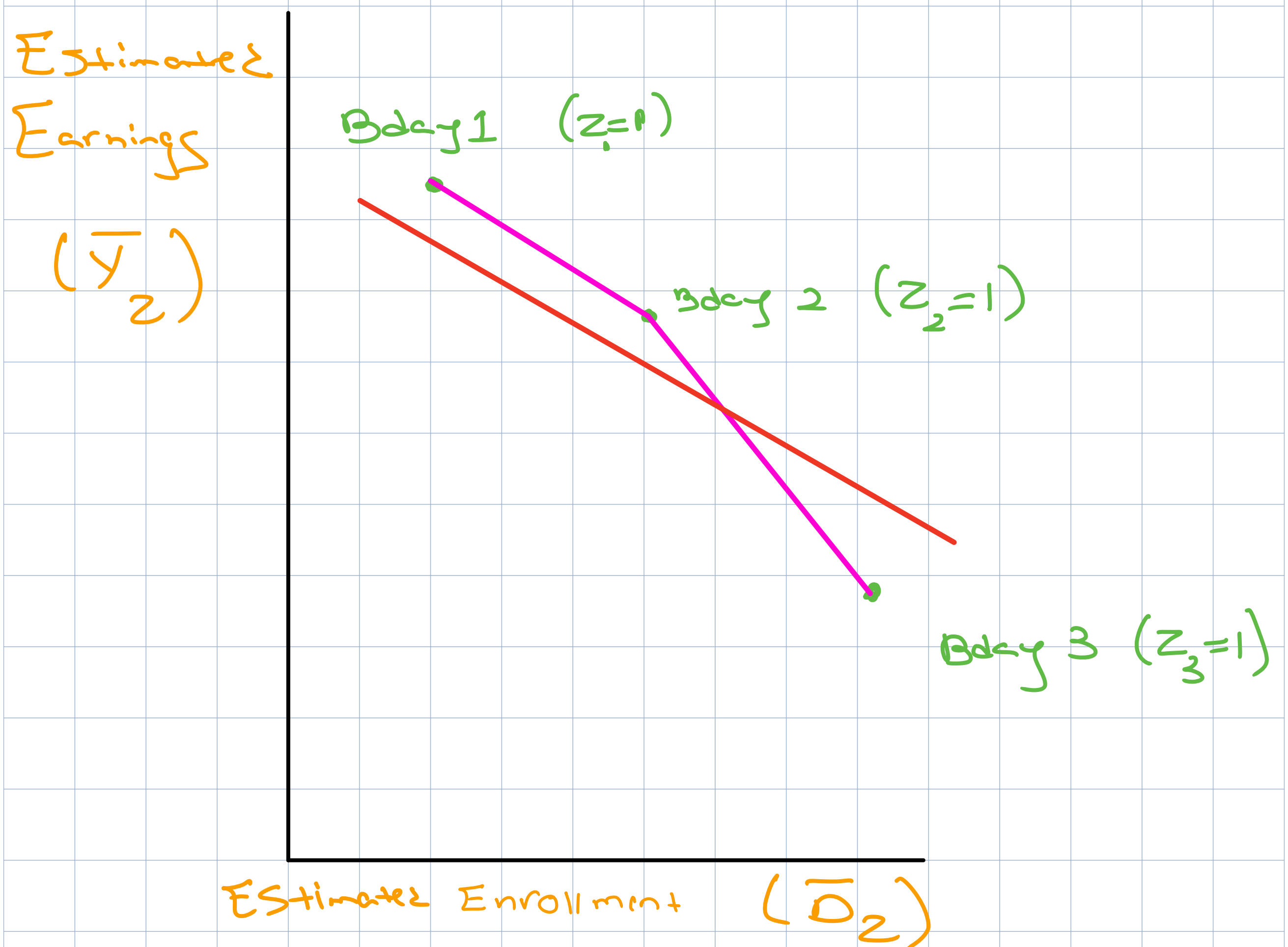


In principle, we can identify the LATE for bday 1 vs. 2 and the LATE for bday 2 vs. 3

But this might be hard to estimate in practice if we have few observations per birthday



An easier thing to estimate is the best linear approximation to the green dots $\rightarrow$ weighted avg of $LATE_{1\rightarrow 2}$ and $LATE_{2\rightarrow 3}$



We can approximate the red line using OLS with sample analogs