Labor Economics **J. D. Angrist**
MIT Department of Economics
Spring 2006

PROBLEM SET 1
Due Tuesday, February 28.

A. Book problems

Problems 3, 6, and 12 in Chapter 2 of Borjas.
Problems 4 and 7 in Chapter 5 of Borjas.

B. Data analysis

High rates of overall economic growth are generally believed to be associated with strong real w age growth. Some observers have suggested that this relationship changed around 1980, howe ver, perhaps because labor unions became weaker or because of increased international trade.

1. Collect relevant data from the *Economic Report of the President* or another similar source an d assess the claim of a changed relationship between wage growth and overall economic growt h since 1980. Use graphs and regressions for your analysis. Briefly discuss your findings.

2. Does the relation between economic growth and wage growth have a clear theoretical interpr etation in a supply-and-demand framework?

C. Analytical problem–Extra credit

In recent years, many immigrants have come to Silicon Valley to work in the software industry. Assume there are two types of programmers: natives (Type 1) and immigrants (Type 2). Initially , assume that there are n_1 native programmers in the labor force and no immigrants.

The aggregate labor supply function of native programmers is $n_1S_1(w_1)$, where $S_1(w_1)$ is the labo r supply function of an individual programmer.

(i) Suppose that immigrant programmers have labor supply functions identical to native labor supply functions. Further, assume that firms treat immigrant and nati ve programmers as perfect substitutes. Using a graph, show the effect on native programmers of an influx of $n_2=n_1$ immigrants. Compare this with the effect of im migration if immigrant labor supply is perfectly inelastic.

(ii) Using the mathematical methods in the Johnson (1980) paper, find the effect of dn_2 on native employment in the two scenarios described in (i), above.