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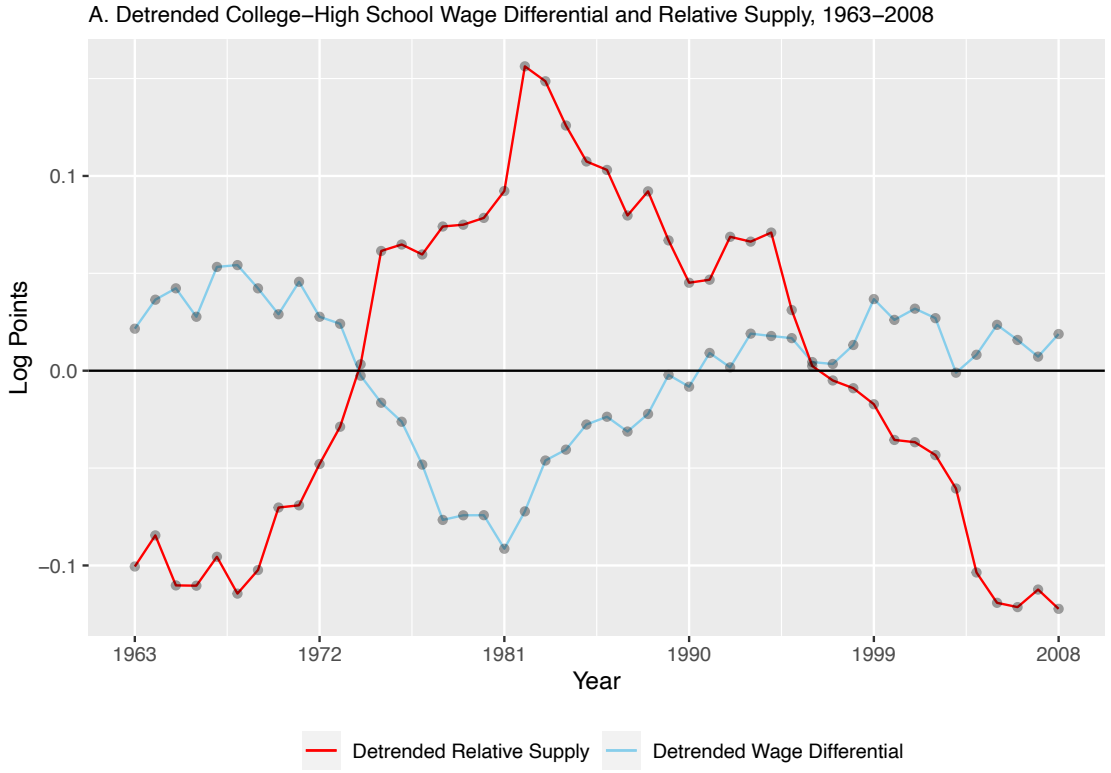
Overview

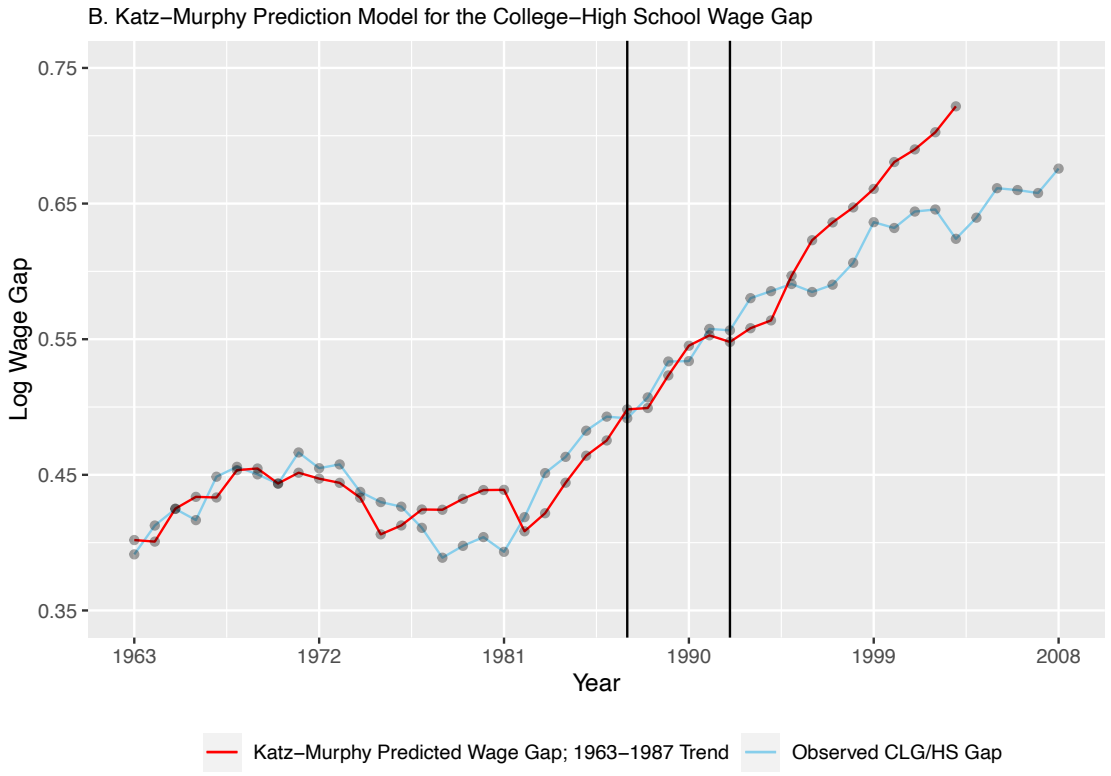
The aim of this analysis is to reproduce and extend Figure 4 and Table 2 in the Autor-Katz-Kearney (AKK) 2008 RESTAT paper that studies trends in income inequality in the United States using new data that spans from 1963 to 2008.

Recreating Figure 4

Panel A of Figure 4 plots the college relative supply and wage premium series over 1963 to 2008 deviated from a linear time trend. This figure reveals an acceleration of the growth in the relative supply of college workers between 1970-1980 relative to the growth between 1960-1970, followed by a dramatic slowdown starting in 1982. Assuming a constant trend growth in the relative college demand (demand for "skilled labor"), these fluctuations in the growth rate of relative supply effectively explain the evolution of the college wage premium from 1963 to 2008. Meaning if there is a constant trend growth in the demand for college educated workers, then an acceleration in college relative supply leads to a fall in the college-wage premium.



Panel B of Figure 4 shows that the Katz-Murphy (KM) model predicts the growth of the college wage premium through 1994 well (with the exception of the late 1970s). The wage gap that is predicted by the KM model runs in tandem with the observed wage gap until 1994 after which the precited wage gape and observed wage gap start deviating. After 1994, there is a break in the growth trend of relative supply the growth in college relative supply slows down and the KM model starts overpricting the growth in the college wage premium since it does not account for this trend break.



Recreating Table 2

	Dependent variable:				
	College/High School Log Wage Gap, 1963-2008				
	(1)	(2)	(3)	(4)	(5)
Time	0.027***	0.016***	0.028***	0.029***	0.020***
	p = 0.0001***	p = 0.000***	p = 0.000***	p = 0.00002***	p = 0.002***
	(0.005)	(0.001)	(0.002)	(0.006)	(0.006)
Time x post 1992			-0.010***		
			p = 0.00001***		
			(0.002)		
Time Square by 100				-0.013**	0.036***
				p = 0.039**	p = 0.006***
				(0.006)	(0.012)
Time Cube by 1000					-0.007***
					p = 0.0001***
					(0.002)
CLG HS Relative Supply	-0.612***	-0.339***	-0.644***	-0.562***	-0.556***
	p = 0.0001***	p = 0.000***	p = 0.000***	p = 0.00002***	p = 0.00000***
	(0.128)	(0.043)	(0.066)	(0.112)	(0.094)
Constant	-0.217	0.059	-0.254***	-0.189	-0.145
	p = 0.119	p = 0.138	p = 0.0004***	p = 0.130	p = 0.168
	(0.134)	(0.039)	(0.066)	(0.122)	(0.103)
Observations	25	46	46	46	46
R2	0.558	0.935	0.961	0.941	0.960
Adjusted R2	0.518	0.932	0.959	0.937	0.956
Residual Std. Error	0.021 (df = 22)	0.024 (df = 43)	0.019 (df = 42)	0.023 (df = 42)	0.020 (df = 41)
F Statistic	13.912*** (df = 2; 22)	307.239*** (df = 2; 43)	348.045*** (df = 3; 42)	223.275*** (df = 3; 42)	243.224*** (df = 4; 41)

Based on the regression table output above we can calculate the reciprocal of the coefficient on the log relative supply variable in order to get a table containing estimates of the elasticity of substitution:

	(1)	(2)	(3)	(4)	(5)
Elasticity of substitution	-1.634	-2.950	-1.553	-1.779	-1.799

A larger elasticity of substitution estimate implies that there is a smaller impact of changes in relative skill supplies on relative wages.

Calculating Trend Break Year

In the RESTAT paper published by Autor, Katz, and Kearney (2008) they state that the Katz-Murphy model does a great job of predicting the growth of the college wage premium until 1992. However, they state that the continued slow growth of relative supply after 1992 leads the model to overpredict the growth in the college wage premium. They say that this pattern implies there is a slowdown in relative demand growth for college workers since 1992.

Upon utilizing the new data that goes up until the year 2008, I find that the year this trend in the college/high school relative supply is broken is 1994 since it has the largest R^2 and hence is overpredicting the college wage premium.

To calculate the trend break year I iterated through each year and assumed that the trend break occurs in that year and then calculated the R^2 of regression model that allows for trend break in that year.