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There's no evidence that immigrants hurt any American workers

The debate over the Mariel boatlift, a crucial immigration case study, explained.

By Michael Clemens | Updated Aug 3, 2017, 10:13am EDT

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A boat arrives in Key West, Florida, with Cuban refugees, in April 1980 | Miami Herald / Getty

THE **BIG IDEA**

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Pressed by a New York Times reporter yesterday for evidence that immigration hurts American workers, White House senior adviser Stephen Miller said: "I think the most recent

study I would point to is the study from George Borjas that he just did about the Mariel Boatlift.” Michael Clemens recently explained why that much-cited study shouldn’t be relied upon:

Do immigrants from poor countries hurt native workers? It’s a perpetual question for policymakers and politicians. That the answer is a resounding “Yes!” was a central assertion of Donald Trump’s presidential campaign. When a study by an economist at Harvard University **recently found** that a famous influx of Cuban immigrants into Miami dramatically reduced the wages of native workers, immigration critics argued that the debate was settled.

The study, by Harvard’s George Borjas, first circulated as a draft in 2015, and was finally published in 2017. It drew attention from **the Atlantic, National Review, New Yorker**, and others. Advocates of restricting immigration declared that the study was a “**BFD**” that had “**nuked**” their opponents’ views. The work underpinning the paper became a centerpiece of Borjas’s mass-market book on immigration, *We Wanted Workers*, which has been **cited** approvingly by US Attorney General Jeff Sessions as proving the economic harms of immigration.

But there’s a problem. The study is controversial, and its finding — that the Cuban refugees caused a large, statistically unmistakable fall in Miami wages — may be simply spurious. This matters because what happened in Miami is the one historical event that has most shaped how economists view immigration.

In his article, Borjas claimed to debunk an earlier study by another eminent economist, David Card, of UC Berkeley, analyzing the arrival of the Cubans in Miami. The episode offers a textbook case of how different economists can reach sharply conflicting conclusions from exactly the same data.

Yet this is not an “on the one hand, on the other” story: My own analysis suggests that Borjas has not proved his case. Spend a few minutes digging into the data with me, and it will become apparent that the data simply does not allow us to conclude that those Cubans caused a fall in Miami wages, even for low-skill workers.

The Mariel boatlift offered economists a remarkable opportunity to study the effect of immigration

For an economist, there’s a straightforward way to study how low-skill immigration affects native workers: Find a large, sudden wave of low-skill immigrants arriving in one city only.

Watch what happens to wages and employment for native workers in that city, and compare that to other cities where the immigrants didn't go.

An ideal “natural experiment” like this actually happened in Miami in 1980. Over just a few months, 125,000 mostly low-skill immigrants arrived from Mariel Bay, Cuba. This vast seaborne exodus — Fidel Castro briefly lifted Cuba's ban on emigration — is known as the **Mariel boatlift**. Over the next few months, the workforce of Miami rose by 8 percent. By comparison, normal immigration to the US increases the nationwide workforce by about 0.3 percent per *year*. So if immigrants compete with native workers, Miami in the 1980s is exactly where you should see natives' wages drop.

Berkeley's Card examined the effects of the Cuban immigrants on the labor market in **a massively influential study** in 1990. In fact, that paper became one of the most cited in immigration economics. The design of the study was elegant and transparent. But even more than that, what made the study memorable was what Card found.

In a word: *nothing*.

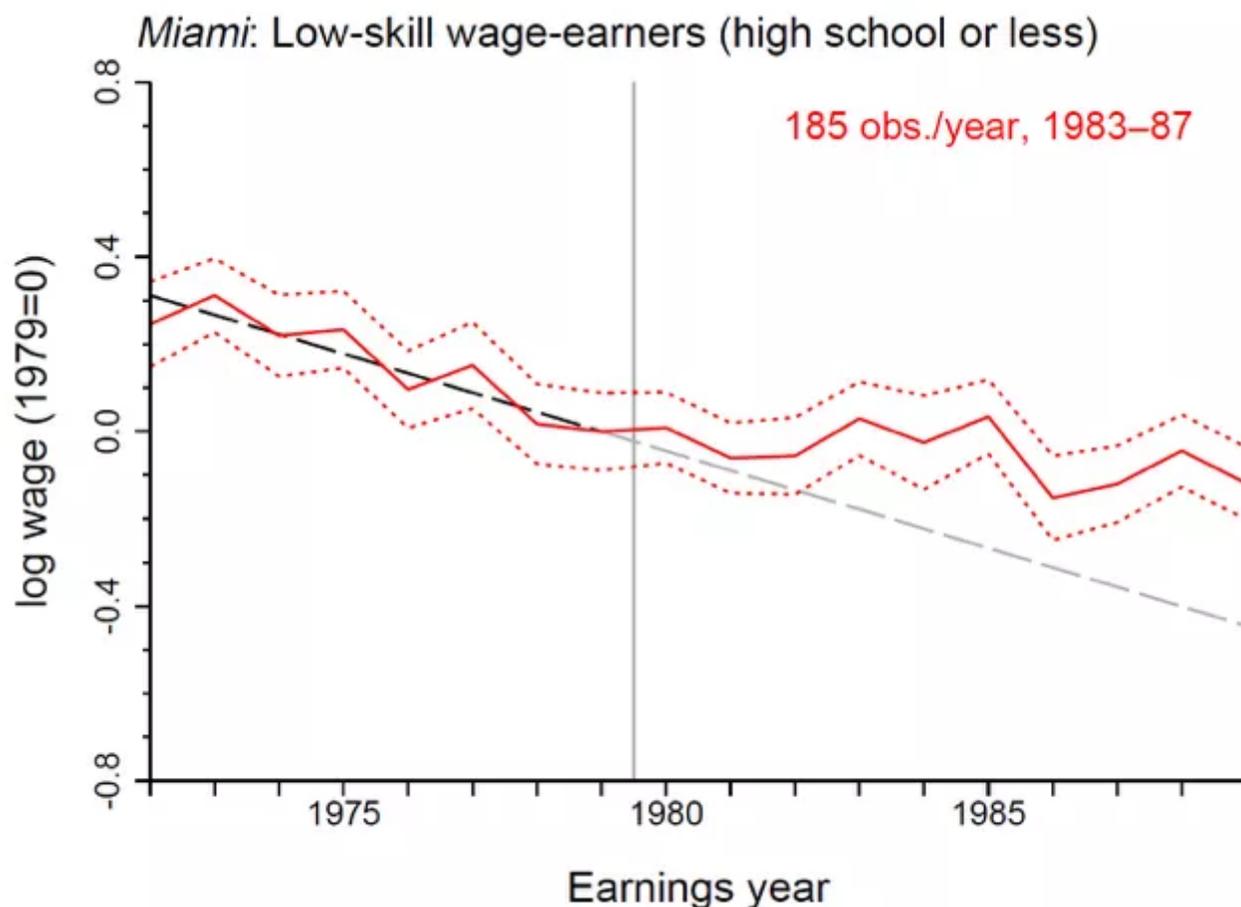
The Card study found no difference in wage or employment trends between Miami — which had just been flooded with new low-skill workers — and other cities. This was true for workers even at the bottom of the skills ladder. Card concluded that “the Mariel immigration had essentially no effect on the wages or employment outcomes of non-Cuban workers in the Miami labor market.”

You can see Card's striking result in the graph below: There's just no sign of a dip in low-skill Miami wages after the huge arrival of low-skill Cubans in 1980. The red line is the average wage, in each year, for workers in Miami, ages 19 to 65, whose education doesn't go beyond high school. The dotted red lines show the interval of statistical confidence, so the true average wage could fall anywhere between the dotted lines.

These estimates come from a slice of a nationwide survey, in which small groups of individuals are chosen to represent the broader population. (It's known as the **March Supplement** of the Current Population Survey, or CPS). Carving out low-skill workers in Miami alone, that leaves an average of 185 observations of workers per year, during the crucial years.

The gray dashed line shows what the wage would be if the pre-1980 trend had simply continued after 1980. As you can see, there is no dip in wages after those Cubans greatly

increased the low-skill labor supply in 1980. If anything, wages *rose* relative to their previous trend in Miami. The same is true relative to wage trends in other, similar cities.



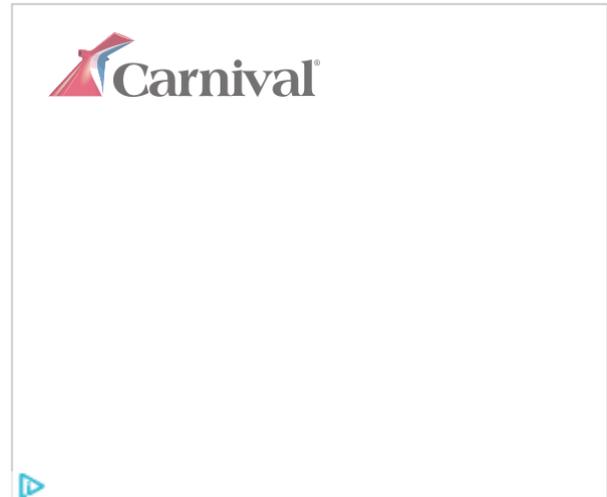
Current Population Survey, Clemens

Economists ever since have tried to explain this remarkable result. Was it that the US workers who might have suffered a wage drop had **simply moved away**? Had low-skill Cubans **made native Miamians more productive** by specializing in different tasks, thus stimulating the local economy? Was it that the Cubans' own demand for goods and services had **generated as many jobs in Miami as they filled**? Or perhaps was it that Miami employers **shifted to production technologies** that used more low-skill labor, absorbing the new labor supply?

Regardless, there was no dip in wages to explain. The real-life economy was evidently more complex than an "Econ 101" model would predict. Such a model would require wages to fall when the supply of labor, through immigration, goes up.

Slicing up the data — all too finely

This is where two new studies came in, decades after Card's — in 2015. One, by Borjas, claims that Card's analysis had obscured a large fall in the wages of native workers by using too broad a definition of “low-skill worker.” Card's study had looked at the wages of US workers whose education extended only to high school *or less*. That was a natural choice, since about half of the newly-arrived Cubans had a high school degree, and half didn't.



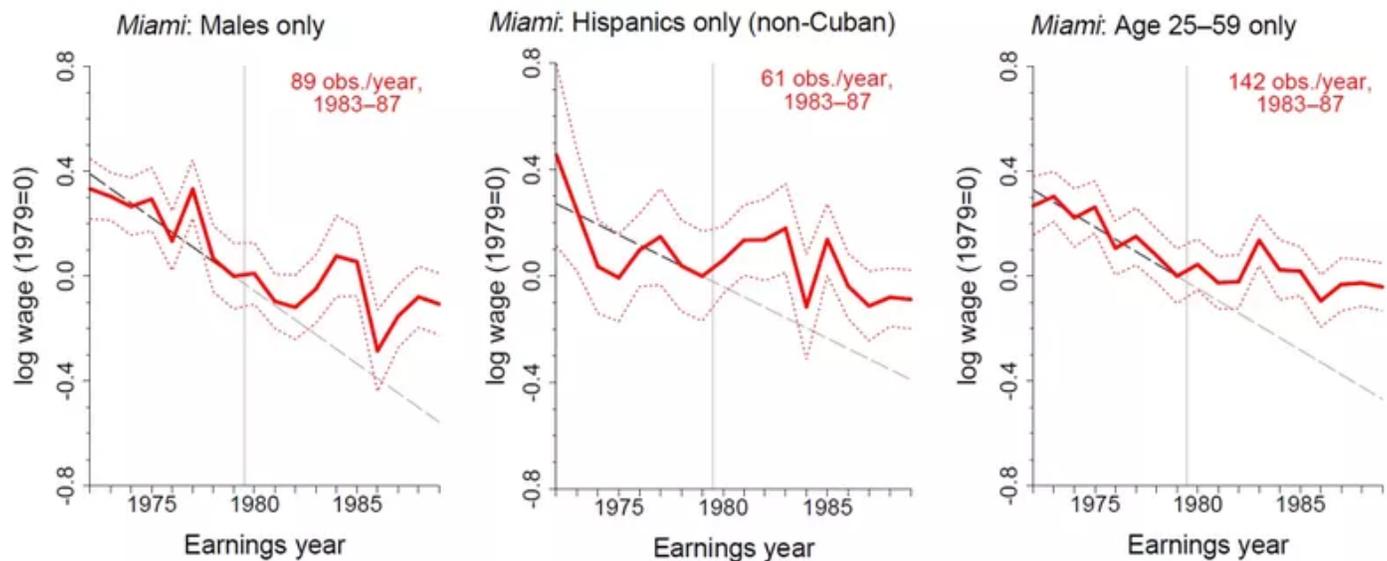
Borjas, instead, focuses on workers who did not finish high school — and claimed that the Boatlift caused the wages of *those* workers, those truly at the bottom of the ladder, to collapse.

The **other new study (ungated here)**, by economists Giovanni Peri and Vasil Yasenov, of the UC Davis and UC Berkeley, *reconfirms* Card's original result: It cannot detect an effect of the boatlift on Miami wages, even among workers who did not finish high school.

In short, different well-qualified economists arrive at opposite conclusions about the effects of immigration, looking at the same data about the same incident, with identical modern analytical tools at their disposal. How that happened has a lot to teach about why the economics of immigration remains so controversial.

THE FACT THAT THE BORJAS STUDY'S RESULT REQUIRES DROPPING HISPANICS FROM THE SAMPLE IS PARTICULARLY TROUBLING

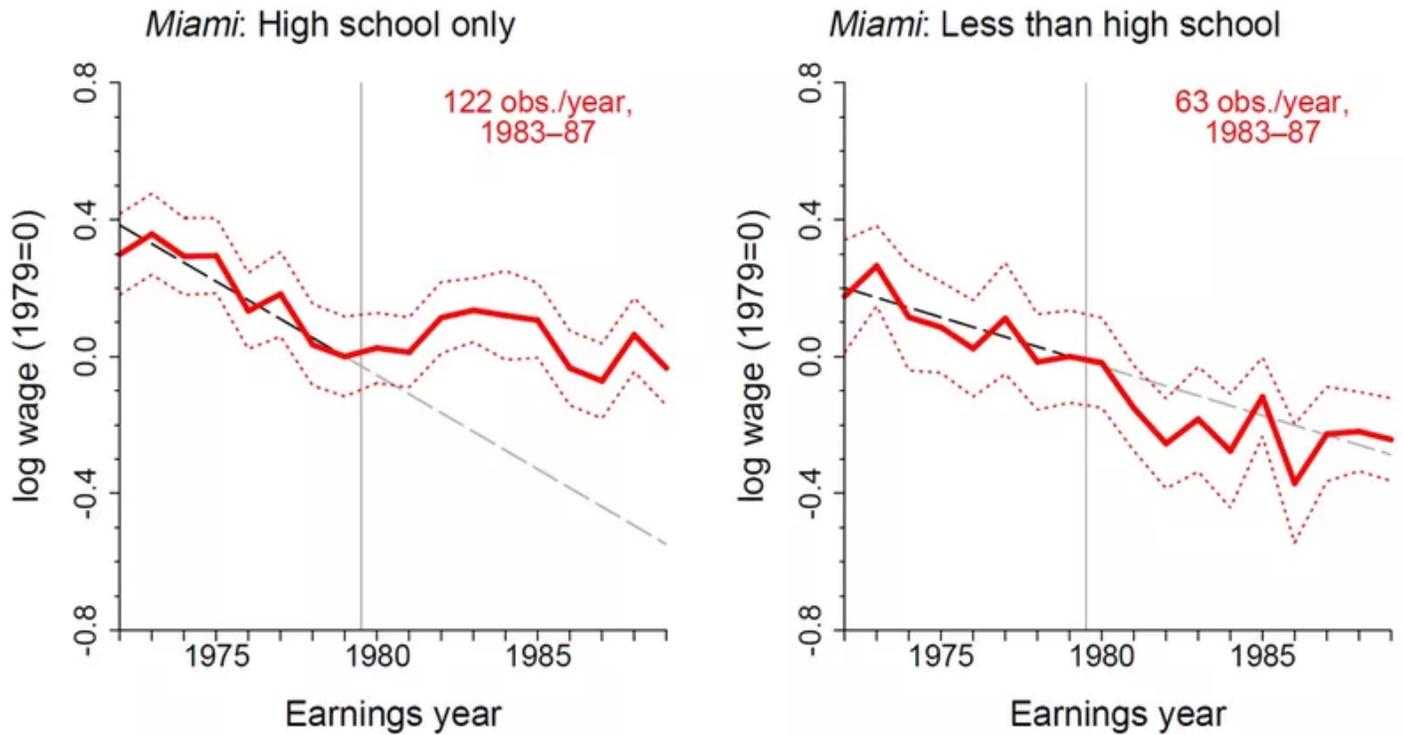
Suppose we are concerned that the graph above, covering all low-skill workers in Miami, is too aggregated — meaning it combines too many different kinds of workers. We would not want to miss the effects on certain subgroups that may have competed more directly with the newly-arrived Cubans. For example, the Mariel migrants were mostly men. They were Hispanic. Many of them were prime-age workers (age 25 to 59). So we should look separately at what happened to wages for each of those groups of low-skill workers who might compete with the immigrants more directly: men only, non-Cuban Hispanics only, prime-age workers only. Here's what wages look like for those slices of the same data:



Current Population Survey, Clemens

Here again, if anything, wages rose for each of these groups of low-skill workers after 1980, relative to their previous trend. There isn't any dip in wages to explain. And, again, the same is true if you compare wage trends in Miami to trends in other, similar cities.

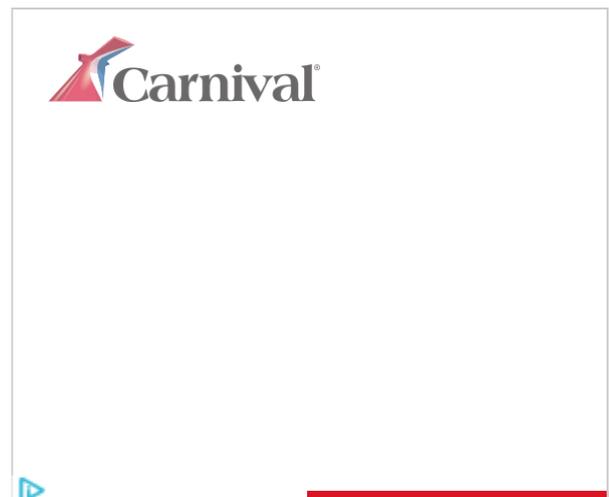
Peri and Yasenov showed that there is still no dip in wages even when you divide up low-skill workers by whether or not they finished high school. About half of the Mariel migrants had finished high school, and the other half hadn't. So you might expect negative wage effects on both groups of workers in Miami. Here is what the wage trends look like for those two groups.



Current Population Survey, Clemens

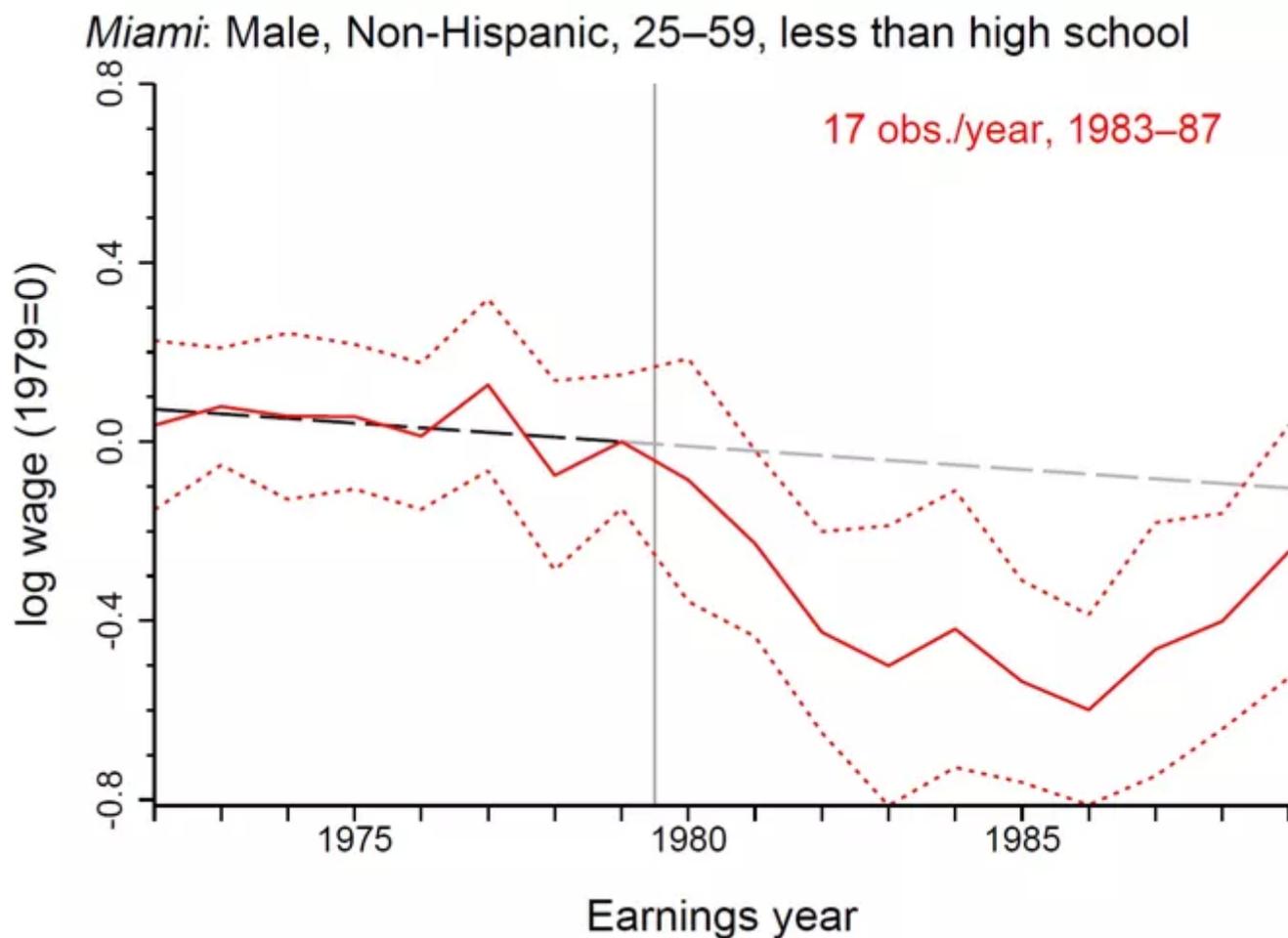
The wages of Miami workers with high school degrees (and no more than that) jump *up* right after the Mariel boatlift, relative to prior trends. The wages of those with less than a high school education appear to dip slightly, for a couple of years, although this is barely distinguishable amid the statistical noise. And these same inflation-adjusted wages were also falling in many other cities that didn't receive a wave of immigrants, so it's not possible to say with statistical confidence whether that brief dip on the right is real. It might have been — but economists can't be sure. The rise on the left, in contrast, is certainly statistically significant, even relative to corresponding wage trends in other cities.

Here is how the Borjas study reaches exactly the opposite conclusion. The Borjas study slices up the data much more finely than even Peri and Yasenov do. It's not every worker with less than high school that he looks at. Borjas starts with the full sample of workers of high school or less — then removes women, *and* Hispanics, *and* workers who aren't prime age (that is, he tosses out those who are 19 to 24, and 60 to 65). And



then he removes workers who have a high school degree.

In all, that means throwing out the data for 91 percent of low-skill workers in Miami in the years where Borjas finds the largest wage effect. It leaves a tiny sample, just 17 workers per year. When you do that, the average wages for the remaining workers look like this:



Current Population Survey, Clemens

For these observations picked out of the broader dataset, average wages collapse by at least 40 percent after the boatlift. Wages fall way below their previous trend, as well as way below similar trends in other cities, and the fall is highly statistically significant.

How to explain the divergent conclusions?

There are two ways to interpret these findings. The first way would be to conclude that the wage trend seen in the subgroup that Borjas focuses on — non-Hispanic prime-age men with less than a high school degree — is the “real” effect of the boatlift. The second way would be to conclude, as Peri and Yasenov do, that slicing up small data samples like this

generates a great deal of statistical noise. If you do enough slicing along those lines, you can find groups for which wages rose after the Boatlift, and others for which it fell. In *any* dataset with a lot of noise, the results for very small groups will vary widely.

Researchers can and do disagree about which conclusion to draw. But there are many reasons to favor the view that there is no compelling basis to revise Card's original finding. There is not sufficient evidence to show that Cuban immigrants reduced *any* low-skill workers' wages in Miami, even small minorities of them, and there isn't much more that can be learned about the Mariel boatlift with the data we have.

Here are three reasons why Card's canonical finding stands.

Borjas's theory doesn't fit the evidence

The first reason is economic theory. The simple theory underlying all of this analysis is that when the supply of labor rises, wages have to fall. But if we interpret the wage drop in Borjas's subgroup as an effect of the Boatlift, we need to interpret the upward jumps in the other graphs above, too, as effects of the Boatlift. That is, we would need to interpret the sharp post-Boatlift *rise* in wages for low-skill Miami Hispanics, regardless of whether they had a high school degree, as another effect of the influx of workers.

But wait. The theory of supply and demand cannot explain how a massive infusion of low-skill Cuban Hispanics would cause wages to *rise* for other Hispanics, who would obviously compete with them. For the same reason, we would need to conclude that the boatlift caused a large *rise* in the wages of Miami workers with high school degrees only, both Hispanic and non-Hispanic — who constitute the large majority of low-skill workers in Miami. And so on.

Economic theory doesn't offer a reason why such a big benefit should happen. So we should be suspicious of jumping to the rosy conclusion that the Mariel boatlift caused big wage increases for the other 91 percent of low-skill workers in Miami. One could reach that conclusion by the same method Borjas used, if one sought such a result. But we should



hesitate to make strong conclusions — one way or another — from *any* handpicked subset of the data.



Hundreds of Cuban refugees who came to the United States during the Mariel boat lift apply for permanent resident status, under a new program in 1984. | Bettman / Getty

The study states that this was done because, among other reasons, the arrival of non-Cuban Hispanics in some of the other cities that Miami is being compared to — including Anaheim and Rochester — may have driven down wages in those places. But the graphs shown here are just for Miami, unaffected by that hypothetical concern.

As you can see above, the wages of low-skill Hispanics as a whole jumped *upward* in Miami in the years after the boatlift. Dropping the data on groups that experienced wage increases, without a sound theoretical reason to do so, ensures by construction that wages fall in the small group that remains. The method determines the result.

There's too much noise in the data to conclude native workers were hurt

The second reason the data backs Peri and Yasenov's interpretation is statistical noise caused by small subsamples. Because there is a great deal of noise in the data, if we're

willing to take low-skill workers in Miami and hand-pick small subsets of them, we can always find small groups of workers whose wages rose during a particular period, and other groups whose wages fell. But at some point we're learning more about statistical artifacts than about real-world events.

Remember the key Borjas sample in each year — the one that experienced a large drop in wages — was just 17 men. By picking various small subsets of the data, a researcher could hypothetically get any positive or negative “effect” of the boatlift.

Race made a difference here

Yet another reason to believe the Card study remains solid has to do with something very different from statistical noise. Average wages in tiny slices of the data can change sharply because of small but *systematic* changes in who is getting interviewed. And it turns out that the CPS sample includes vastly more black workers in the data used for the Borjas study *after* the boatlift than before it.



Because black men earned less than others, this change would necessarily have the effect of exaggerating the wage decline measured by Borjas. The change in the black fraction of the sample is too big and long-lasting to be explained by random error. (This is my own contribution to the debate. I explore this problem in a new **research paper** that I co-authored with Jennifer Hunt, a professor of economics at Rutgers University.)

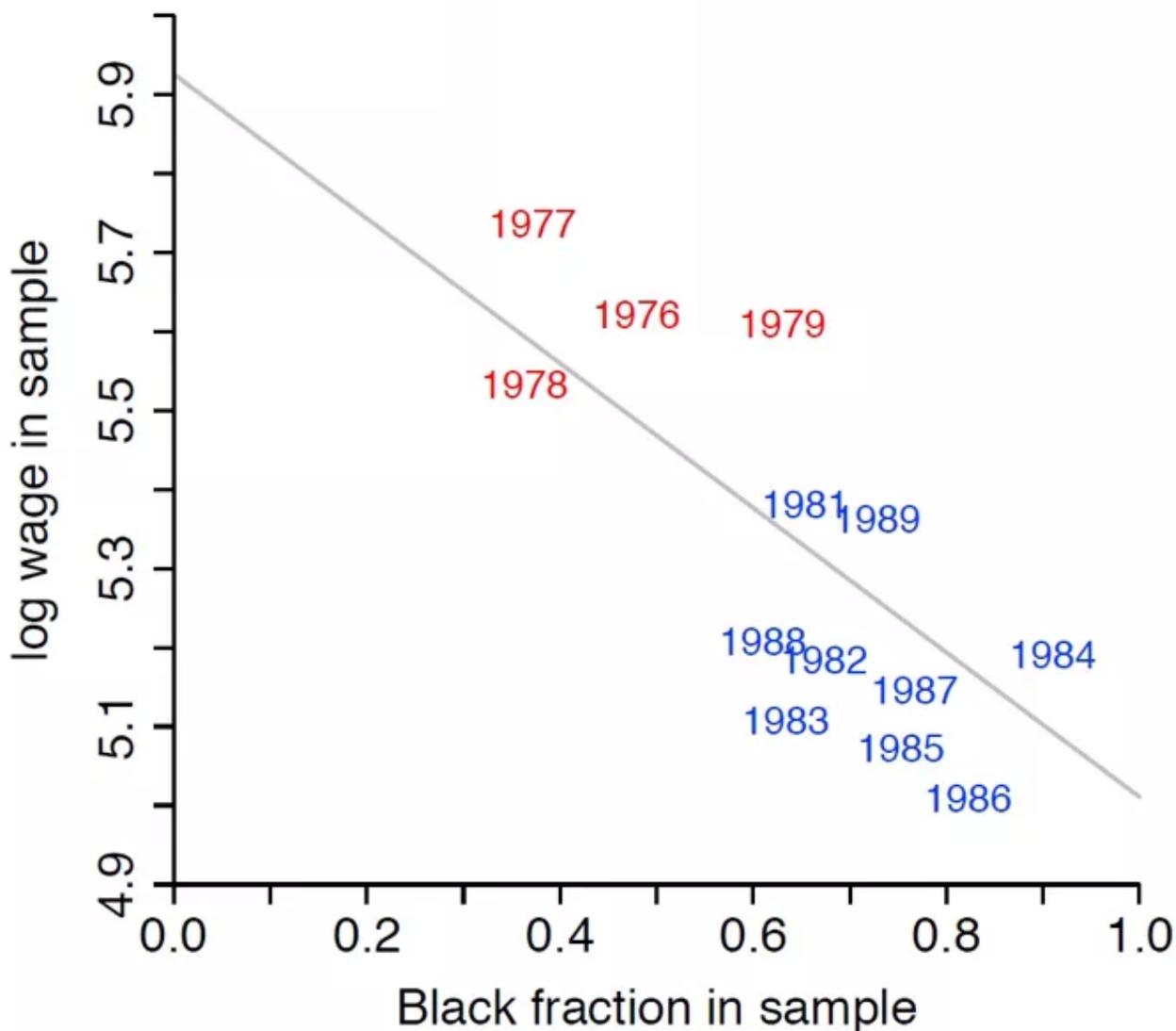
Around 1980, the same time as the Boatlift, two things happened that would bring a lot more low-wage black men into the survey samples. First, there was a simultaneous arrival of large numbers of very low-income **immigrants from Haiti** without high school degrees: that is, non-Hispanic black men who earn much less than US black workers but cannot be distinguished from US black workers in the survey data. Nearly all hadn't finished high school.

That meant not just that Miami suddenly had far more black men with less than high school after 1980, but also that those black men had much lower earnings. Second, the Census Bureau, which ran the CPS surveys, improved its survey methods around 1980 to cover

more low-skill black men due to **political pressure** after research revealed that many low-income black men simply **weren't being counted**.

You can see what happened in the graph below, which has a point for each year's group of non-Hispanic men with less than high school, in the data used by Borjas (ages 25 to 59). The horizontal axis is the fraction of the men in the sample who are black. The vertical axis is the average wage in the sample. Because black men in Miami at this skill level earned much less than non-blacks, it's no surprise that the more black men are covered by each year's sample, the lower the average wage.

Miami: Workers with less than high school

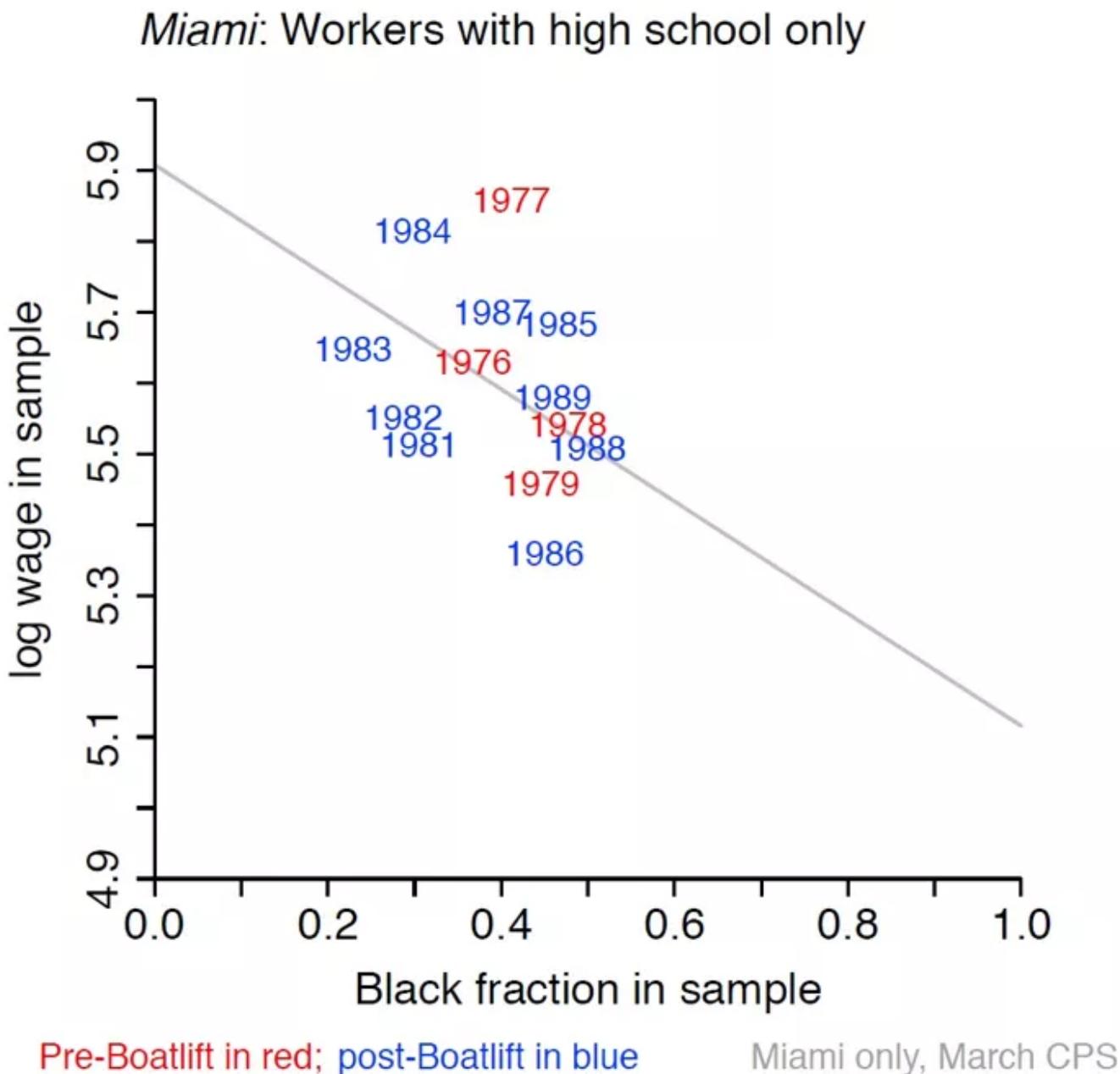


Pre-Boatlift in red; post-Boatlift in blue

Miami only, March CPS

But here's the critical problem: The fraction of black workers in this sample increased dramatically between the years just before the boatlift (in red) and the years just after the boatlift (in blue). That demographic shift would make the average wage in this group appear to fall right after the boatlift, even if no one's wages actually changed in any subpopulation. What changed was who was included in the sample.

Why hadn't this problem affected Card's earlier results? Because there wasn't any shift like this for workers who had finished high school only (as opposed to less than high school). Here is the same graph for those workers (again, non-Hispanic males 25 to 59):



Here, too, you can see that in the years where the survey covered more black men, the average wage is lower. But for this group, there wasn't any increase in the relative number of blacks surveyed after 1980. If anything, black fraction of the sample is a little lower right after 1980. So the average wage in the post-boatlift years (blue) isn't any lower than the average wage in the pre-boatlift years (red). About two-thirds of Card's sample was these workers, where the shift in the fraction of black workers did not happen.

When the statistical results in the Borjas study are adjusted to allow for changing black composition of the sample in each city, **the result becomes fragile**. In the dataset Borjas focuses on, the result suddenly depends on which set of cities one chooses to compare Miami to. And in the other, larger CPS dataset that covers the same period, there is no longer a statistically significant dip in wages at all.

You might think that there's an easy solution:

Just test for the effects of the boatlift on workers who aren't black. But this is *really* pushing the data further than it can go. By the time you've discarded women, and Hispanics, and workers under 25, and workers over 59, and anyone who finished high school— *and* blacks, you've thrown away 98 percent of the data on low-skill workers in Miami. There are only four people left in each year's survey, on average, during the years that the Borjas study finds the largest effect. The average wage in that minuscule slice of the data looks like this:

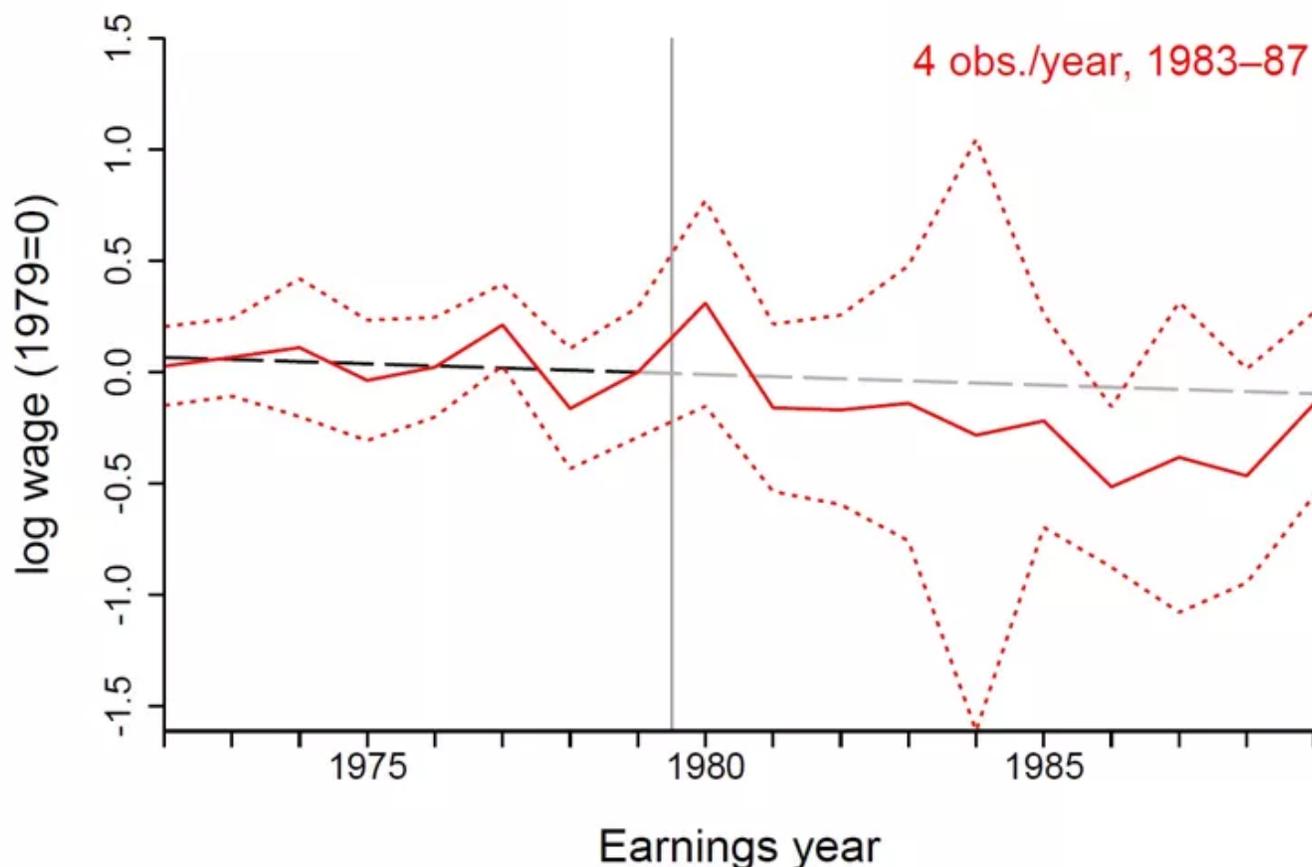
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Miami: Non-Black, Non-Hispanic, Male 25–59, less than high school



Current Population Survey, Clemens

With samples that small, the statistical confidence interval (represented by the dotted lines) is huge, meaning we can't infer anything general from the results. We can't distinguish large declines in wages from large rises in wages — at least until several years after the boatlift happened, and those can't be plausibly attributed to the boatlift. Taking just four workers at a time from the larger dataset, a researcher could achieve practically any result whatsoever. There may have been a wage decline in this group, or a rise, but there just isn't sufficient evidence to know.

David Card's canonical conclusion stands

In sum, the evidence from the Mariel boatlift continues to support the conclusion of David Card's seminal research: There is no clear evidence that wages fell (or that unemployment rose) among the least-skilled workers in Miami, even after a sudden refugee wave sharply raised the size of that workforce.

This does not by any means imply that large waves of low-skill immigration could not displace any native workers, especially in the short term, in other times and places. But

politicians' pronouncements that immigrants necessarily *do* harm native workers must grapple with the evidence from real-world experiences to the contrary.

Michael Clemens is an economist at the Center for Global Development in Washington, DC, and the IZA Institute of Labor Economics in Bonn, Germany. His book The Walls of Nations is forthcoming from Columbia University Press.

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