**The effects of local job losses on intergenerational mobility: A post-election discussion**

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The results of the U.S. presidential election and Britain's vote to leave the European Union have focused new attention on the struggles of people in regions where jobs have been destroyed by globalization and technology. Observers have wrestled with the fact that many voters in these areas are relatively well-off, and that the vast majority have not themselves experienced job loss. Many residents report a great deal of anger and frustration nonetheless, with their concerns focused on the fear that their children will not do as well as they have.

Because the employment and earnings benefits to higher education rose rapidly over this period of deindustrialization, the primary prescription of many academic and government economists in response to fears about the success of the next generation has been increased public investment in and promotion of higher education. Indeed, after the 1993 book *Uneven Tides: Rising Inequality in America (1)* documented the now well-known growth since the 1970s of income disparities in the United States, several traditional labor economists suggested that the increased inequality would likely be self-correcting: intergenerational mobility would greatly increase as blue-collar youth, rather than following their parents' footsteps to the now-closed factory, would respond to the increased returns to college and join the "knowledge economy."

A generation later, we have empirically tested that hypothesis by using the groundbreaking measures of local intergenerational mobility produced by Chetty et al.[1] (*2*) and our own well-validated method for identifying causal effects of local job losses (*3-5*) to examine the effects of job destruction on income inequality in college attendance (see Figure 1). Putting together our prior work with our new findings on intergenerational mobility suggests that worsened adolescent mental health, and associated lower academic performance, is an overlooked mediator between community job losses and decreased educational mobility.

We found that state-level job losses when a cohort was aged 12 through 17, in fact, led to decreases in intergenerational mobility. In particular, a one-standard-deviation increase in state-level job losses during adolescence led to a .16 standard-deviation increase in the gap in college attendance between rich and poor youth, driven by falling attendance among youth from the lowest-income families and stable attendance among youth from the highest-income families. A cumulative state job loss of 7 percent—experienced by the most-affected decile of American adolescents—led to a 20 percent decline in the likelihood that the poorest youth attended college. In Figure 1, the average state's income-college attendance gradient before job losses is shown in blue, while the (consistently steeper) gradient after a cumulative state job loss of 7 percent is shown in orange. Rather than clearing a path to new educational opportunities in

[1] Chetty et al., using confidential IRS individual tax returns, measured the aggregate relationship between parental income and college attendance for each US commuting zone. They publicly released two summary statistics describing this relationship, namely the intercepts and gradients (linear slopes); we relied on these public-use data.

deindustrializing areas, job destruction knocks many youth off the path to college. Detailed results are provided in Table S1.

Importantly, that pattern of results cannot be understood as a loss of financial access to college due to reduced income. Indeed, our results demonstrate that the effect of job destruction on educational inequality does not vary by state college tuition levels (Table S2). The reasons are twofold. First, aggregate job loss does not cause marked economic decline. Our analyses of Census data showed that a one-standard-deviation increase in state job losses led to a decline in income among households containing an early adolescent of less than 2% (Table S3). Second, over this period, financial aid for post-secondary education expanded dramatically as part of policy efforts to help economically struggling families, and these efforts succeeded in lowering inequality in the share of family income paid for tuition (*6*). That is, the payoffs to college increased at the same time affordability did, aligning incentives with financial access.

Instead, we propose worsened adolescent mental health, and associated lower academic performance, as an overlooked mediator between community job losses and the decreased mobility we observe among the next generation.[2] In doing so, we bring into dialogue scholarship across disciplines: economics, which has tended to focus on wage incentives and aptitude in explaining educational attainment and earnings, with less attention to the impacts of trauma; and developmental psychology, which has tended to focus on the family environment as the determinant of children's life trajectories, with less attention to larger community-level factors.

In empirical tests of our theory (see left panel of Figure 2 and Table S4), we found that job losses to 1% of the working-age population in the previous year decreased eighth-grade math achievement test scores by .057 standard deviations, a large population-level effect size commensurate with (although opposite in sign of) interventions that are *designed* to impact test scores. While others (*7, 8*) have shown that parental job loss lowers academic performance, the effect we find on communities is much too large to be accounted for by isolated responses among the 1.5% of students whose parents lose employment; instead, it necessarily reflects a macro-level effect that includes responses by the other 98.5% of children in the community. In our best estimate, this indirectly impacted group, which is 65 times the size of the directly impacted group, experiences learning losses due to local job destruction that are about one-third the size of those experienced by children whose parents lose employment.

Moreover, those aggregate learning losses correspond to aggregate declines in youths' mental health. It has long been known that the aggregate mental health of adults, including those who remain employed, declines during economic downturns (*9, 10*). We extend this prior work by demonstrating that aggregate mental health of youth in those communities is also affected. As shown in the right panel of Figure 2 (and Table S4), suicidality increases among black youth in response to community-wide job losses by 2.33 percentage points, and, again, the responses are much too large to be driven only by youth who experience job loss within their own families.

[2] Our analyses show results for states, i.e. subnational aggregations of communities, due to data availability. We note that it is unlikely that state-level job losses reflect uniform losses in all communities within a state, and hence unlikely that state-level job losses cause uniform changes in youth outcomes across the state. Nonetheless, the relationship between losses averaged across the state and changes in outcomes averaged across the state is interpretable as the aggregate effect of job losses within communities in that state on outcomes in communities in that state.

We argue, therefore, that local job losses are best conceptualized as community-level traumas, which harm the mental health of both children and adults, and of both families who experience job loss and those who only witness it (*11*). Such trauma inhibits learning, and leaves youth unable to optimally respond to increased economic incentives to invest in education.

Because local job losses are a community-level trauma, sufficiently addressing their impacts has been a public policy challenge. Currently, the main federal policy tool for addressing job losses due to globalization is Trade Adjustment Assistance (TAA), which provides extended unemployment insurance and health benefits, and retraining to workers who lost jobs. TAA may be insufficient, however, since it is narrowly targeted to displaced workers and doesn't consider effects on their children, or on others in the community; indeed, our work finds no moderation in the effects of state job loss on mobility as a function of TAA spending.

Additionally, TAA is only available to workers who can demonstrate that they lost jobs due to trade, and therefore, leaves out the majority of workers, most of whom have lost jobs due to technological change or other reasons. In other western industrialized countries, such as Denmark, governments engage in intensive activities aimed at increasing workers' skills and actively helping workers acquire new employment quickly. Such activities include rigorous job training and active matching of worker skills to employer needs. Services are available to all unemployed citizens and are required for those who are receiving unemployment compensation. Such active labor market policies appear to increase employment rates in countries that use them (*12, 13*). Taken together with our findings, such a policy approach may not only directly assist those who have lost jobs but may also benefit the community more broadly, by reducing the uncertainty that accompanies job losses in the United States. Indeed, the bottom panel of Figure 1 shows that college-going does increase across the income distribution (albeit unevenly) in response to job loss in states where, due to low initial unemployment, finding a new job is easier. Similarly, test score and mental health declines are smaller in contexts of low unemployment (Figure 2; Table S4), suggesting that macro employment instability is much less harmful to youths when re-employment prospects are better.

We cannot conclude without situating our findings in the racial context of the ongoing post-election debates, which have focused quite explicitly on the white working class. Our work, by contrast, consistently uncovers impacts of job destruction that are similar but larger for blacks than for whites (*2-4*). Job losses in the typical area where an African-American lives increase inequality in college attendance by nearly twice as much as the average across the country (top panel of Figure 1; Table S1). Effects of job losses on our proposed mediators, mental health and academic achievement, are also similar, but worse, among African-American youth (Figure 2; Table S4). To suggest that the experiences of displaced whites and blacks require different policy responses unnecessarily complicates the already challenging problem of creating economic opportunity for all, and has created division where there is, in reality, great potential for unity of purpose.

References


1. S. H. Danziger, P. Gottschalk, *Uneven tides: Rising inequality in America*. (Russell Sage Foundation, New York, 1994).
2. R. Chetty, N. Hendren, P. Kline, E. Saez, N. Turner, Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility. *National Bureau of Economic Research Working Paper No. w19844*, (2014).
3. E. O. Ananat, A. Gassman-Pines, C. M. Gibson-Davis, in *Whither Opportunity? Rising Inequality and the Uncertain Life Chances of Low-Income Children,* G. J. Duncan, R. Murnane, Eds. (Russell Sage Foundation, New York, 2011), pp. 299-313.
4. E. O. Ananat, A. Gassman-Pines, C. M. Gibson-Davis, The Effect of Local Job Loss on Teenage Birthrates: Evidence from North Carolina. *Demography* **50**, 2151-2171 (2013).
5. A. Gassman-Pines, E. O. Ananat, C. M. Gibson-Davis, Effects of statewide job losses on adolescent suicide-related behaviors. *American Journal of Public Health* **104**, 1964-1970 (2014).
6. S. M. Dynarski, J. Scott-Clayton, Financial aid policy: Lessons from research. *Future of Children* **23**, 67-92 (2013).
7. A. Kalil, P. Wightman, Parental Job Loss and Children's Educational Attainment in Black and White Middle-Class Families. *Social Science Quarterly* **92**, 57-78 (2011).
8. A. H. Stevens, J. Schaller, Short-run effects of parental job loss on children's academic achievement. *Economics of Education Review* **30**, 289-299 (2011).
9. D. Dooley, R. Catalano, The epidemiology of economic stress. *American Journal of Community Psychology* **12**, 387-409 (1984).
10. D. Dooley, R. Catalano, K. S. Rook, Personal and aggregate unemployment and psychological symptoms. *Journal of Social Issues* **44**, 107-123 (1988).
11. A. Gassman-Pines, C. M. Gibson-Davis, E. O. Ananat, How economic downturns affect child development: An interdisciplinary perspective on pathways of influence. *Child Development Perspectives* **9**, 233-238 (2015).
12. J. Nie, E. Struby, Would active labor market policies help combat high US unemployment? *Economic Review-Federal Reserve Bank of Kansas City*, 35 (2011).
13. D. Rodrik, Why do more open economies have bigger governments? *Journal of political economy* **106**, 997-1032 (1998).
14. E. O. Ananat, D. V. Francis, A. Gassman-Pines, C. M. Gibson-Davis, Children left behind: The effects of statewide job loss on student achievement. *NBER Working Paper No. 17104*, (2013).
15. L. S. Jacobson, R. J. LaLonde, D. G. Sullivan, Earnings Losses of Displaced Workers. *The American Economic Review* **83**, 685-709 (1993).
16. Bureau of Labor Statistics, U.S. Department of Labor, https://www.bls.gov/data/
17. Mass Layoff Statistics, U.S. Department of Labor, Bureau of Labor Statistics, https://www.bls.gov/mls/
18. Surveillance, Epidemiology, and End Results Program, National Cancer Institute, National Institutes of Health, https://seer.cancer.gov/
19. National Assessment of Educational Progress, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, https://nces.ed.gov/nationsreportcard/

20. S. Ruggles *et al.* IPUMS (Minneapolis, MN: Minnesota Population Center [producer and distributor], https://usa.ipums.org/usa/
21. Youth Risk Behavior Surveillance System, Centers for Disease Control and Prevention, https://www.cdc.gov/healthyyouth/data/yrbs/
22. American Community Survey, U.S. Census Bureau, https://www.census.gov/programs-surveys/acs/
23. Integrated Postsecondary Education System, National Assessment of Educational Progress, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, https://nces.ed.gov/ipeds/
24. Annual Surveys, National Association of Student Grant & Aid Programs, http://www.nassgap.org/viewrepository.aspx?categoryID=3
25. Poverty, U. S. Census Bureau, https://www.census.gov/topics/income-poverty/poverty.html
26. Regional Economic Accounts, Bureau of Economic Analysis, U.S. Department of Commerce, https://www.bea.gov/regional/index.htm
27. National Delinquency Survey, Mortgage Bankers Association, http://www.mbaa.org/researchandforecasts/productsandsurveys/nationaldelinquencysurvey.htm

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All data files and stata .do code files for this manuscript are available on Dataverse:
https://dataverse.harvard.edu/dataverse/localjoblossandinequality

Supplementary materials included:

- Desription of data and methods
- Tables S1-S11
- Figure S1
- References (*14-27*)
- Description of data files and analysis files
- Data files and analysis files used to generate results (available on Dataverse)