Session 2.1. Brian Kovak

Labor Market Policies to Confront Structural Change

During periods of structural change, the optimal product mix, occupational mix, and skills mix in an economy change more rapidly than usual, often leading to turmoil in labor markets in which many workers lose their jobs. A large and highly credible body of empirical evidence finds that the effects of job loss can be extremely negative and long-lasting. Many displaced workers experience substantial earnings losses (Jacobson et al. 1993; Stevens 1997; Kletzer 1998; Couch and Placzek 2010; Schmieder and von Wachter 2010; Davis and von Wachter 2011; Flaaen et al. 2019; Schmieder et al. 2023), face persistent non-employment (Ruhm 1991; Chan and Stevens 2001), and see reductions in wealth (Stevens and Moulton 2013). These losses can be particularly large when workers are displaced into a weak labor market (Couch and Placzek 2010; Schmieder et al. 2023). Moreover, job displacement can lead to broader societal problems, including lower educational attainment of children (Oreopoulos et al. 2008; Rege et al. 2011; Stevens and Schaller 2011), political polarization (Autor et al. 2020), and higher mortality rates in the years following displacement (Sullivan and Von Wachter 2009; Pierce and Schott 2020).

Given these negative consequences, what policies can most effectively help workers weather periods of structural change? While the early literature on job training and other active labor market policies was broadly pessimistic, this article highlights some emerging empirical regularities suggesting reason for optimism, including recent evidence on government-funded job training and evidence spanning decades on work-incentive policies.

1. Motivation for worker supports

Before discussing the empirical evidence on worker support policies, it is important to understand the motivation and justification for government intervention. Periods of trade liberalization provide useful

case studies in which to frame this discussion, since trade policy reforms driving structural change are observable, facilitating the measurement of their consequences for workers.

There is scope for worker-support policies even in a neoclassical world with frictionless, perfect markets. The Stolper-Samuelson Theorem in the textbook Heckscher-Ohlin model of trade shows that although trade liberalization yields aggregate welfare gains, some input owners will lose in absolute terms. In many cases these input owners will be a particular group of workers – for example, in a high-income country context the Heckscher-Ohlin model predicts that less-educated workers will lose from freer global integration. Therefore, in order for freer trade to make everyone better off, some compensation program is required.

Moreover, there is clear evidence that labor markets are rife with frictions (Manning 2003; Naidu and Dube 2024). Firms and workers face search frictions; human-capital is specific to particular jobs or industries, and reskilling is costly; employers are imperfectly able to monitor workers' effort; industries and occupations are spatially concentrated, and workers face moving costs. The presence of frictions raises the possibility that labor market policies can help improve aggregate outcomes by smoothing transitions, going beyond just compensating workers who lose due to structural change.

A case in point is the large literature on the effects of trade shocks on local labor markets. In many circumstances, trade liberalization or increased imports lead to surprisingly persistent effects on the workers or local labor markets facing the largest increases in import competition. For example, in a study of the effects of trade liberalization on Brazilian labor markets, Dix-Carneiro and Kovak (2017) find that regions facing larger tariff reductions had slower earnings growth and slower employment growth than regions facing less import competition, and that these effects are not only persistent, but grow in magnitude for nearly two decades following the start of Brazilian trade liberalization. Similarly persistent effects appear in research studying the sharp increase in imports from China to the United States during the 2000s, known as the "China Shock" (Autor et al. 2014, 2021). These trade-related episodes make clear that labor markets are imperfect and that many workers do not quickly or easily transition out of contracting industries and into growing industries, particularly in the face of structural changes that permanently alter the mix of products produced and occupations in the labor market.

2. Worker-support policies

The following discussion focuses on policies targeting working-age individuals facing structural change, but it is important to note that policies focusing on children and young-adults are often the most cost-effective means of improving the wellbeing of individuals in disadvantaged families (Hendren and Sprung-Keyser 2020). Yet, worker-support policies remain relevant under the presumption that society is unwilling to abandon a generation of adult workers to face the negative consequences of job displacement during periods of structural change.

There is wide variation in the measured effectiveness of worker-support policies including job training, public or private employment subsidies, and job-search assistance, but there are some systematic findings. Public-sector employment subsidies tend to have the least favorable effects on workers' employment and earnings, while job-search assistance and worker training tend to have more positive effects, although these findings are mixed as well (Crépon and van den Berg 2016; Card, Kluve, and Weber 2018; Bown and Freund 2019). The wide range of findings for seemingly similar programs makes it difficult to draw strong conclusions about the best paths forward, but I would like to emphasize a few takeaways from the recent literature on worker support.

2.1 Worker training

The consensus regarding worker training was quite negative a few years ago, but recent evidence suggests more reason for optimism. I see three potential reasons for this change.

First, Card et al.'s (2018) meta-analysis finds that training programs' effects become systematically more favorable over longer time horizons. This pattern may in part reflect program participants focusing on program activities rather than job search, leading to unfavorable outcomes shortly after the program's completion. To the extent that more recent studies have been able to observe participant outcomes for longer periods of time, the favorable longer-run effects are more likely to be observed.

Second, in some contexts researchers have been able to improve upon selection-on-observables designs that assume treated and untreated individuals differ on average only in terms of observable features that

can be controlled for directly. Two examples are papers by Hyman (2018) studying job training under the US Trade Adjustment Assistance (TAA) program and Humlum, Munch, and Rasmussen (2023) who study publicly funded classroom training in Denmark. Both papers uncover the causal effect of training using quasi-random assignment to investigators or caseworkers with systematically different odds of assigning unemployed workers to treatment. In the case of TAA, Hyman (2018) finds that TAA training increases workers' cumulative earnings by $50,000 over 10 years following displacement, with a favorable rate of return on government funds. In the Danish classroom training example, the effects are also very positive, with training increasing hours of employment by 25 percent, and increasing the odds of switching occupations, which suggests the training may help smooth worker transitions.

In both cases, the favorable effects disappear when using evaluation methods assuming selection on observables, underscoring the importance of having an appropriate empirical design. Schochet et al. (2012) report on a propensity-score matching analysis of the effects of TAA training implemented by Mathematica Policy Research. Their findings are largely negative, concluding that the "impacts of TAA on engagement in any productive activity were small," with slightly negative overall effects on earnings. Humlum et al. (2023) implement a selection-on-observables approach alongside their caseworker assignment design, controlling for extensive demographic, educational, and labor market history features. The estimated effects of the Danish training program are persistently negative, precisely the opposite of the effects estimated using the main caseworker assignment design. Thus, in both cases, the evaluator assignment design was pivotal to revealing the positive effects of the training programs, while selection-on-observables approaches yield misleading negative results.

Third, some organizations appear to have developed approaches to worker training that are particularly effective for workers with relatively low wages and without a college degree. As summarized by Katz et al. (2022), these sector-focused training programs have four common elements: 1) targeting jobs in growth industries and occupations, 2) focusing on skills and certifications that are transferrable across firms, which may be under-provided by the private market, 3) providing worker intake screening for drug use, motivation, and other soft skills, and 4) providing extensive wrap-around services before, during, and

after training and job placement. This structure provides both technical and soft-skills training and maintains links between the training providers and employers that help avoid curricular obsolescence.

Katz et al. (2022) summarize the results of randomized evaluations covering various similar sector-focused programs, finding large and persistent earnings gains of 12 to 34 percent for participating workers. These earnings increases are largely driven by increases in the odds of working in a higher-wage job rather than by increasing hours or employment probability. While program costs are substantial, ranging from roughly $5,000 to $10,000 per participant, available cost-benefit analyses remain favorable.

2.2 Work-incentive policies

Another empirical regularity is the success of programs incentivizing employment by increasing the returns to work for unemployed workers. Examples include 1) the Illinois Reemployment Bonus experiment, in which workers receive a fixed cash bonus if they quickly find full-time reemployment and maintain it for a specified period (Woodbury and Spiegelman 1987), 2) the Reemployment Trade Adjustment Assistance (RTAA) wage insurance program, in which displaced workers who find reemployment at a lower wage receive a temporary subsidy covering a portion of the gap between their old and new wages (Hyman et al. 2024), and 3) the Canadian Self-Sufficiency Project, which combined the reemployment deadline of a bonus program with wage insurance's inverse relationship between reemployment wages and the subsidy amount (Card and Hyslop 2005, Michalopoulos et al. 2005). These programs all generated substantial increases in employment and earnings for eligible workers. Moreover, by increasing employment and thus reducing benefit payments and increasing tax revenues, the programs were self-financing.

As an example, consider our study of the RTAA wage insurance program (Hyman et al. 2024). To be eligible for the broader TAA program, a worker must be part of a mass layoff that a Department of Labor investigator certifies as resulting from increased imports or offshoring. The criteria include observing a reduction in sales due to import competition or offshoring production outside the United States, so the program explicitly targets workers whose displacement results from globalization-induced structural

change. TAA-certified workers are eligible for wage insurance only if they are age 50 or over and if they find a new job paying less than their pre-displacement job and not exceeding maximum earnings caps. The subsidy covers half of the gap between their new and old wages for up to two years, subject to a maximum subsidy cap. We use the age-50 eligibility rule to measure the impact of the program, effectively comparing 49- and 50-year-olds using a regression-discontinuity approach.

We find very favorable effects. Wage insurance eligibility increases the employment probability by up to 18 percentage points 8 quarters following displacement, with the effect falling to close to zero by 16 quarters, as ineligible workers' employment rates catch up. Average earnings, measured as a share of pre-displacement earnings, increase by about 10 percentage points, and these gains remain throughout the 4-year period following displacement. Note that these effects omit the subsidy payments themselves and that the earnings impacts persist well beyond the subsidy eligibility period. Aggregating these effects over the 4 years following displacement, we find that cumulative earnings increase by roughly $18,000, which is a 26 percent increase relative to marginally ineligible workers. These earnings increases largely reflect shorter unemployment durations for eligible workers, with no evidence for wage declines or reductions in job quality. Because eligible workers spent more time employed, the resulting increased tax revenue and foregone benefit payments exceeded the costs of the subsidy payments and administrative costs of the program, even under conservative assumptions. In other words, the program was self-financing, saving the government money on net.

3. Generalizability and Scaling Up

The favorable results surveyed in the preceding section provide reason for optimism, but do they generalize to other settings, and can they be scaled up to reach a broader population of workers facing structural change?

3.1 Generalizability

Following the excellent results of the Illinois bonus experiment (Woodbury and Spiegelman 1987), New Jersey, Pennsylvania, and Washington ran similar experiments. However, the results were far less favorable, for reasons that remain unclear (Meyer 1995). Meyer (1995) argues, based on prior estimates of Unemployment Insurance (UI) take-up behavior, that the bonus program design, which required UI registration to be eligible for the bonus, may sharply increase UI take-up. If so, this increase in UI take-up could potentially offset the fiscal benefits of the program. While the RTAA wage insurance program had impressive results, two other wage insurance programs, in Canada (Bloom et al. 2001) and Germany (Stephan et al. 2016; Ammermuller et al. 2006; Brussig et al. 2006; Zwick 2006), found minimal effects. This difference seems to have been driven by impediments to participation, either the requirement to find a job quickly in the Canadian program or the requirement to gain approval from authorities prior to starting the new job in the German program. In fact, take-up was similarly low in the US wage insurance program during a pilot period from 2002-2009, when workers had to find reemployment within 26 weeks. These differences suggest that wage insurance programs and reemployment bonuses can be quite effective, but the implementation details matter.

Scaling Up

Can these programs scale to confront the broader challenges posed by structural changes on the horizon? One concern is that most of the programs discussed above were relatively small in the sense that a very small share of workers searching for a job were affected by the program. This implies that employers would be very unlikely to change their recruitment behavior in response to the programs' existence. However, if a larger fraction of workers were eligible for these programs, employers might respond by lowering wages or changing vacancy-creation behavior. In that case, it is likely that the existence of the program would affect not only participating workers, but non-participants as well. Crépon et al. (2013) find strong evidence for such spillovers by randomizing eligibility for a job placement program in France while varying the proportion of eligible individuals across labor markets. If such effects apply to the training and work-incentive policies discussed above, then one should expect less favorable effects on workers' outcomes if the programs were scaled up.

Another scale-related question is whether it will be possible to attract larger numbers of participants. Even sectoral training programs along the lines of those studied by Katz et al. (2022) have struggled to attract participants. The programs generally take many weeks or months to complete, during which participants cannot work, and despite favorable average outcomes, results for individual workers remain uncertain. Scaling up these training programs also requires that much larger groups of workers can pass the initial screening processes required for participation. Finally, sustainable funding streams for training programs must be identified, since workers are generally unable to borrow against potential future earnings to finance training.

Conclusion

The preceding discussion has emphasized some bright spots in the research literature studying policies to help workers facing job displacement due to structural change. These favorable results suggest that the associated policies warrant further experimentation from policymakers and attention from researchers. Yet, while these findings provide reason for optimism, there is much left to learn. The literature struggles to explain the wide range of estimated effects for apparently similar programs serving apparently similar groups of workers (Card et al. 2018). Perhaps, as in the case of wage insurance, the details of eligibility rules and program implementation are pivotal. There is also deep uncertainty about the ability to scale up even the most successful programs. Understanding how to successfully broaden the reach of these worker support programs is an essential topic for additional research.

References

Ammermüller, Andreas, Bernhard Boockmann, Michael Maier, and Thomas Zwick. 2006. "Eingliederungszuschüsse und Entgeltsicherung für Ältere–Analysen auf Basis natürlicher Experimente." *Vierteljahrshefte zur Wirtschaftsforschung* 75, no. 3: 49–66, 2006.

Autor, David H., David Dorn, and Gordon H. Hanson. 2021. “The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade.” *Annual Review of Economics* 8: 205–240, 2021.

Autor, David H., David Dorn, Gordon H. Hanson, and Kaveh Majlesi. 2020. “Importing Political Polarization? The Electoral Consequences of Rising Trade Exposure.” *American Economic Review* 110, no. 10: 3139–3183, 2020.

Autor, David H., David Dorn, Gordon H. Hanson, and Jae Song. 2014. “Trade adjustment: Worker-level evidence.” *Quarterly Journal of Economics* 129, no. 4: 1799–1860, 2014.

Bloom, Howard S., Saul Schwartz, Susanna Lui-Gurr, Suk-Won Lee, Jason Peng, and Wendy Bancroft. 2001. “Testing a Financial Incentive to Promote Re-employment among Displaced Workers: The Canadian Earnings Supplement Project (ESP).” *Journal of Policy Analysis and Management* 20, no. 3: 505–523, 2001.

Bown, Chad P., and Caroline L. Freund. 2019. “Active Labor Market Policies: Lessons from Other Countries for the United States.” Peterson Institute for International Economics, 2019.

Brussig, Martin, Sarah Bernhard, Ursula Jaenichen, and Thomas Zwick. 2006. “Zielstellung, Förderstrukturen und Effekte der ‘Entgeltsicherung’: Erfahrungen mit einem Kombilohn für ältere Arbeitnehmerinnen und Arbeitnehmer.” *Zeitschrift für ArbeitsmarktForschung - Journal for Labour Market Research* 39, no. 3/4: 491–504, 2006.

Card, David, and Dean R. Hyslop. 2005. “Estimating the effects of a time-limited earnings subsidy for welfare-leavers.” *Econometrica* 73, no. 6: 1723–1770, 2005.

Card, David, Jochen Kluve, and Andrea Weber. 2018. “What works? A meta analysis of recent active labor market program evaluations.” *Journal of the European Economic Association* 16, no. 4: 894–931, 2018.

Chan, Sewin, and Ann Huff Stevens. 2001. “Job loss and employment patterns of older workers.” *Journal of Labor Economics* 19, no. 2: 484–521, 2001.

Couch, Kenneth A., and Dana W. Placzek. 2010. “Earnings Losses of Displaced Workers Revisited.” *American Economic Review* 100, no. 1: 572–589, 2010.

Crépon, Bruno, and Gerard J. van den Berg. 2016. “Active labor market policies.” *Annual Review of Economics* 8: 521–546, 2016.

Crépon, Bruno, Esther Duflo, Marc Gurgand, Roland Rathelot, and Philippe Zamora. 2013. “Do labor market policies have displacement effects? Evidence from a clustered randomized experiment.” *Quarterly Journal of Economics* 128, no. 2: 531–580, 2013.

Davis, Steven J., and Till M. von Wachter. 2011. “Recessions and the costs of job loss.” *Brookings Papers on Economic Activity*: 1–72, 2011.

Dix-Carneiro, Rafael, and Brian K. Kovak. 2017. “Trade liberalization and regional dynamics.” *American Economic Review* 107, no. 10: 2908–2946, 2017.

Flaaen, Aaron, Matthew D. Shapiro, and Isaac Sorkin. 2019. “Reconsidering the Consequences of Worker Displacements: Survey versus Administrative Measurements.” *American Economic Journal: Macroeconomics* 11, no. 2: 193–227, 2019.

Hendren, Nathan, and Ben Sprung-Keyser. 2020. “A unified welfare analysis of government policies.” *Quarterly Journal of Economics* 135, no. 3: 1209–1318, 2020.

Humlum, Maria K., Jakob R. Munch, and Anders W. Rasmussen. 2023. “What Works for the Unemployed? Evidence from Quasi-Random Caseworker Assignments.” Working paper, 2023.

Hyman, Benjamin. 2018. “Can Displaced Labor Be Retrained? Evidence from Quasi-Random Assignment to Trade Adjustment Assistance.” Working paper, 2018.

Hyman, Benjamin, Brian K. Kovak, and Adam Leive. 2024. “Wage Insurance for Displaced Workers.” NBER Working Paper 32464, 2024.

Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. “Earnings losses of displaced workers.” *The American Economic Review* 83, no. 4: 685–709, 1993.

Katz, Lawrence F., Jonathan Roth, Richard Hendra, and Kelsey Schaberg. 2022. “Sectoral Employment Programs: A Synthesis of the Literature.” *Journal of Labor Economics* 40, no. S1: S253–S288, 2022.

Kletzer, Lori G. 1998. “Job Displacement.” *Journal of Economic Perspectives* 12, no. 1: 115–136, 1998.

Manning, Alan. 2003. *Monopsony in Motion*. Princeton University Press, 2003.

Meyer, Bruce D. 1995. “Lessons from the US unemployment insurance experiments.” *Journal of Economic Literature* 33, no. 1: 91–131, 1995.

Michalopoulos, Charles, Philip K. Robins, and David Card. 2005. “When financial work incentives pay for themselves: Evidence from a randomized social experiment for welfare recipients.” *Journal of Public Economics* 89, no. 1: 5–29, 2005.

Naidu, Suresh, and Arindrajit Dube. 2024. “Monopsony Power in Labor Markets.” *NBER Reporter* (1): 7–12, 2024.

Oreopoulos, Philip, Marianne E. Page, and Ann Huff Stevens. 2008. “The intergenerational effects of worker displacement.” *Journal of Labor Economics* 26, no. 3: 455–483, 2008.

Pierce, Justin R., and Peter K. Schott. 2020. “Trade Liberalization and Mortality: Evidence from US Counties.” *American Economic Review: Insights* 2, no. 1: 47–64, 2020.

Rege, Mari, Kjetil Telle, and Mark Votruba. 2011. “Parental job loss and children’s school performance.” *Review of Economic Studies* 78, no. 4: 1462–1489, 2011.

Ruhm, Christopher J. 1991. “Are workers permanently scarred by job displacements?” *American Economic Review* 81, no. 1: 319–324, 1991.

Schmieder, Johannes F., and Till von Wachter. 2010. “Does wage persistence matter for employment fluctuations? Evidence from displaced workers.” *American Economic Journal: Applied Economics* 2, no. 1: 1–21, 2010.

Schmieder, Johannes F., Till von Wachter, and Jörg Heining. 2023. “The Costs of Job Displacement over the Business Cycle and Its Sources: Evidence from Germany.” *American Economic Review* 113: 1208–1254, 2023.

Schochet, Peter Z., Ronald D’Amico, Jillian Berk, Sarah Dolfin, and Nathan Wozny. 2012. “Estimated Impacts for Participants in the Trade Adjustment Assistance (TAA) Program Under the 2002 Amendments.” Mathematica Policy Research, 2012.

Stephan, Gesine, Gerard van den Berg, and Pia Homrighausen. 2016. “Randomizing information on a targeted wage support program for older workers: A field experiment.” Working paper, 2016.

Stevens, Ann Huff. 1997. “Persistent effects of job displacement: The importance of multiple job losses.” *Journal of Labor Economics* 15, no. 1: 165–188, 1997.

Stevens, Ann Huff, and Jeremy G. Moulton. 2013. “Effects of Late-Life Job Loss on Wealth and Labor Supply.” In *Lifecycle Events and Their Consequences: Job Loss, Family Change, and Declines in Health*, edited by K. Couch, M. Daly, and J. Zissimopoulos, 281–315. Stanford University Press, 2013.

Stevens, Ann Huff, and Jessamyn Schaller. 2011. “Short-run effects of parental job loss on children’s academic achievement.” *Economics of Education Review* 30, no. 2: 289–299, 2011.

Sullivan, Daniel, and Till von Wachter. 2009. “Job displacement and mortality: An analysis using administrative data.” *Quarterly Journal of Economics* 124, no. 3: 1265–1306, 2009.

Woodbury, Stephen A., and Robert G. Spiegelman. 1987. “Bonuses to workers and employers to reduce unemployment: Randomized trials in Illinois.” *American Economic Review* 77, no. 4: 513–530, 1987.

Zwick, Thomas. 2006. *Evaluation der Maßnahmen zur Umsetzung der Vorschläge der Hartz-Kommission: Arbeitspaket 1, Wirksamkeit der Instrumente; Modul 1d, Eingliederungszuschüsse und Entgeltsicherung; Endbericht durch den Forschungsverbund*. Vol. F356d of Forschungsbericht / Bundesministerium für Arbeit und Soziales. Mannheim u.a.: Zentrum für Europäische Wirtschaftsforschung (ZEW) GmbH, 2006.