

# EMPLOYER POWER AND EMPLOYEE SKILLS:

UNDERSTANDING WORKFORCE TRAINING  
PROGRAMS IN THE CONTEXT OF LABOR MARKET  
POWER

REPORT BY **SURESH NAIDU** AND  
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# Key Findings

- The vast majority of American income inequality does not result from a “skills gap.” Driven by policy choices and macroeconomic conditions, structural weakening of nonprofessional workers’ economic and political power in the last 50 years accounts for a large share of the period’s increased inequality.
  - Skill-biased organizational and technological change is a factor in explaining inequality but shows little evidence of becoming more important in explaining inequality over time. Furthermore, technical change and its results can be shaped by policy.
  - The rate of return to general education is significant but has been stagnant since the 2001 recession. The value of education to workers stems from more than simply the return on skills that employers desire. Returns also depend on bargaining power.
- Employers’ complaints about “skills gaps” may be better explained by their power in the labor market (“monopsony”) and resulting unwillingness to raise wages to increase supply. Just as monopolists look for more customers while reducing quantity and raising prices, monopsonists look for more and better workers while paying low wages and refusing to raise them.
- Sectors with potentially severe monopsony power include those often thought to have the largest potential for job growth, such as technology and health care. But it is important to recognize that monopsony is not the property of a few highly concentrated or artificially restricted markets; it is pervasive and inherent in the labor market, even when (perhaps especially when) high turnover is observed.
- Monopsony does not necessarily have to have increased over time to usefully explain current economic conditions. The decline of countervailing institutions—for example, labor unions—exacerbates the impact of what latent monopsony power there is.
- Existing evaluations of training programs suggest that any returns to US programs that provide adult training “alone” tend to fade quickly and are not consistent across program designs.
- Regardless of design, some of the apparent benefits of training programs may be countervailed by negative spillovers onto nonparticipating workers, particularly when jobs are rationed by employers, regulation, or



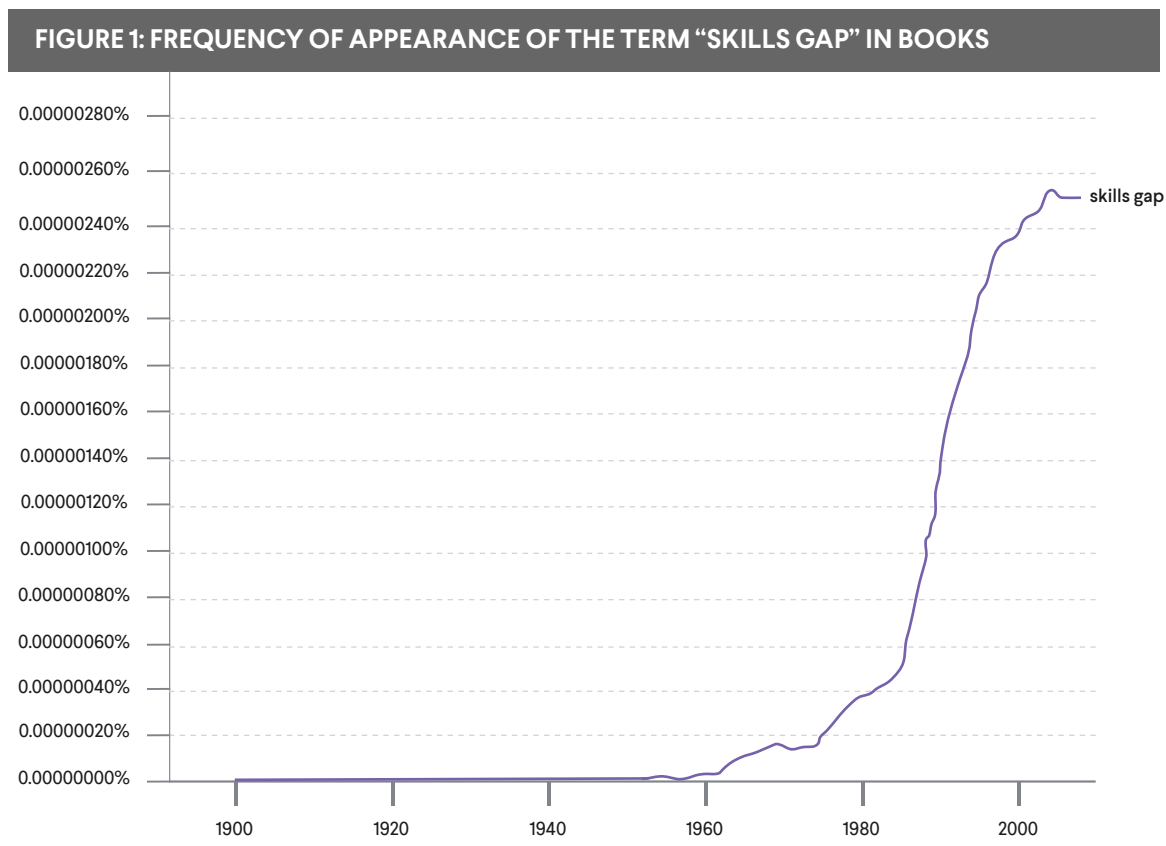
macroeconomic conditions; this suggests that addressing inequality will require alternative strategies. Further, training programs may *exacerbate* income inequality—even if measured by individual-level wage increases—depending on the degree to which increased productivity is captured more in the form of increased profits by employers with monopsony power (or in prices charged by suppliers of other inputs like college-educated labor or land) than in wage increases for workers with less formal education.

- While the efficacy of training programs in the United States seems low compared to that in other countries, sectoral employment programs show much greater promise. Their multifaceted nature, however, leaves us without sufficient information to judge which components are effective and why.
  - The narrow job set targeted, extensive prescreening of participants, and employer matching and retention coaching involved in most sectoral programs may be as critical to their success as the skills training component.
  - Better studies are needed to tease out the relative importance of each component of sectoral training programs.
  - Sectoral programs without worker representation built into their administration are likely to generate smaller earnings effects, may not scale, and may exacerbate inequality.
  - Experimental evaluations alone cannot reveal which programs generalize and scale and which ones do not.
  - Measures of earnings are imperfect summaries of the value of specific jobs and should be supplemented with more comprehensive measures, as well as qualitative and ethnographic measures.
- Ultimately, we think the scale of income inequality outmatches training programs' potential to reduce it. However, sectoral employment programs that build worker input directly into governance—as, for example, the Wisconsin Regional Training Partnership and Project QUEST do—seem most promising and consistent with suggestive comparative evidence on high returns to active labor market programs in countries with high worker voice. Investing in, expanding, and diversifying training programs delivered in partnership with labor unions and nonprofit intermediaries that credibly countervail employer power may be a direction for workforce training practitioners to pursue.



# Introduction

Over the last few decades, reports of a “skills gap” driving persistent unemployment have proliferated in popular media and business press (see Figure 1). These reports commonly justify centering worker training programs as a key strategy to lift family incomes and reduce inequality. Yet empirical support for widespread skills gaps is weak, and case studies of successful workforce development programs suggest that they require far more than “skills training,” at least in the US context.



Source: Google Books Ngram Viewer

This report seeks to explain why public perception so contradicts the empirical evidence by offering a more nuanced exploration of models of the labor market and their intersection with skills training programs.



Evidence for a skills shortage generally comes from two sources: (1) employers' complaints about hiring difficulties as captured in journalist accounts or in surveys (Bessen 2014; SHRM 2019) and (2) increases in the job vacancy rate (vacancy postings per filled job) holding the unemployment rate fixed, which suggests that matchmaking between open roles and job seekers is becoming harder. Economists refer to this latter change as an outward shift of the "Beveridge curve" (FRED 2014). In the recovery from the Great Recession, as the vacancy rate started to increase while unemployment fell only slowly, it was widely believed that technological change had permanently increased the unemployment rate and that employers could not find workers adequately skilled to fill open positions (Romero 2018).

Subsequent research regarding the recovery from the Great Recession has called into question the extent to which a "skills gap" could explain the shape of the recovery, especially as unemployment fell to historical lows in 2019.

In competitive labor markets, theory suggests that employers should respond to skills shortages by increasing wages, incentivizing workers to seek relevant training. Studies of the aftermath of the Great Recession, however, do not show this wage-increase response from employers, suggesting that persistent unemployment could not be explained by skills gaps in competitive labor markets. In contrast, imperfect competition (monopsony) and broader employer power in the labor market can explain why employers persistently complained about the inability to hire after the Great Recession while remaining unwilling to raise wages.<sup>1</sup>

This report begins by explaining inequality in terms of employer demand for skills, based on the theory of human capital. It then introduces employer market power as a complementary explanation for the unemployment and inequality the skills gap account is trying to explain. With this theoretical background in mind, we review some of the (limited) evidence on whether there is in fact a skills gap—breaking down the concept into a more nuanced set of gaps.

Next, we examine the performance of the remedy recommended by a skills gap diagnosis: worker training programs. Our selective review of the evidence on the recent training program evaluations concludes that successful workforce interventions seem to depend a great deal on wraparound services, the effect of which is difficult to parse as "skill." This suggests that differences in the effects of training programs further depend on crucial individual and institutional

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<sup>1</sup> Other notions of employer power include short-side power (Bowles and Gintis 1992) and bargaining power (Pissarides 2000; Stole and Zweibel 1996). All of these notions of power in the labor market understand wages as influenced not just by a worker's own productivity but by their employer, their outside options, and institutions.



variation. For example, we explore the correlation of countries' union density on the returns from training programs.<sup>2</sup> As another example, we propose that accompanying training with job-search and placement services facilitates labor mobility and reduces employer market power. But accompanying firm-specific training with retention coaching may blunt worker incentives to search for something better. This suggests that sectoral programs that certify skills and facilitate cross-employer mobility may have larger effects than the same training delivered within a context focused on matches with few potential employers.

In the subsequent section, we extend an important meta-analysis of active labor market interventions conducted by David Card, Jochen Kluge, and Andrea Weber in 2017, augmenting the data set with results from experimental evaluations of recent successful sectoral employment programs. Our extension shows that while US training programs are unusually low-performing, recent sectoral employment programs are promising, but not because they are obvious incubators of "skill."

While US sectoral employment programs have most often partnered with employer associations without extensive worker representation, we explore two counterexamples: the Wisconsin Regional Training Partnership (WRTP), which has historically partnered with unions and shows unusually high returns given the short duration of training it offers, and Project QUEST, which is done in conjunction with the West/Southwest Industrial Areas Foundation, a community-based organization with many similarities to a union.

In labor markets characterized by employer market power, the failure to include strong worker representation in the design and governance of many workforce training programs in the US could result in employers rather than workers capturing the bulk of any value generated by the training program, or training programs designed to increase rather than reduce employer market power. Even when workers have some representation, without some lever to raise wages, employers with substantial market power may still capture a disproportionate share of the productivity gains from skills training.

We conclude by offering some thoughts on the limits of existing training programs and suggestions for new directions in program and policy design. We argue that the scale of income inequality outmatches training programs' potential to reduce it. Furthering this weakness, some of the apparent benefit from the

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<sup>2</sup> Many of our views on employer-supplied training and the assumption of perfect competition are not new; the excellent 1994 volume edited by Allison Booth and Dennis Snower, *Acquiring Skills: Market Failures, Their Symptoms and Policy Responses*, and particularly the essay by Margaret Stevens (which builds on her 1994 Oxford Economic Papers work that we review below), makes many of these points in the United Kingdom context.





promising training programs cause negative spillovers onto other workers and undermines their larger purpose. Training programs may also generate additional profits for employers or suppliers of other factors like land or capital, which may exacerbate inequality depending on where those actors sit in the income distribution. As a tool for reducing inequality, training programs may be pushing against powerful headwinds, some of which are created by employer market power.

Integrating employer market power into the analysis of training programs highlights new levers that workforce training programs and workforce policies in general might use to increase earning opportunities and reduce inequality. Alternative strategies, such as those designed to increase worker bargaining power in the economy and politics through unionization and direct wage mandates (e.g., like minimum wages), show potential to generate gains at least as large as those of training programs—directly benefiting low-earning workers, creating positive spillovers onto other workers in job-rationed labor markets, and reducing income inequality by shifting income from highly concentrated capital to labor broadly.<sup>3</sup>

***As a tool for reducing inequality, training programs may be pushing against powerful headwinds, some of which are created by employer market power.***

Throughout this report, we focus on income inequality, not only between individuals at different points in the income distribution but also between white workers and workers of color where appropriate. This is, of course, debatable as a normative focus, but we think the case for a more equal distribution of income in the US is relatively clear. Because inequality is so vast, and so much of it is driven by upper—middle class and top incomes, boosting the incomes of people in poverty while leaving the incomes of rich people untouched (or even increasing them) will do little to reduce inequality, even as it is obviously desirable for other reasons.

Nor do we exclusively focus on earnings inequality, as is common in studies of the labor market. Including the returns to capital and wealth, which are much more unequally distributed by both race and class than earnings, is essential for a comprehensive look at inequality, as we will see below.

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<sup>3</sup> By “job-rationed,” we mean that there are a limited number of jobs, either because of regulations (occupational licensing) or because employers have enough monopsony power that they are unwilling to expand the number of jobs because it would imply having to pay higher wages. If good jobs are rationed, then successful training programs are increasing the odds of a worker getting a good job, without expanding the overall number of good jobs.

Despite its prominence in the recent discourse, we also do not focus on intergenerational income mobility, commonly used as a proxy for equality of opportunity (Chetty et al. 2019). “Equality of opportunity” is somewhat ambiguous as a term, and in its most philosophically rigorous form requires that income be equalized among all people exercising the same level of effort or sacrifice (Roemer 2013). Empirically, it has been used to mean either intergenerational mobility (intergenerational income elasticities or rank-rank correlation between parents’ and children’s income) or absolute income mobility of kids from poor families (e.g., child income rank at the 25<sup>th</sup> percentile of the parent income distribution). Increased absolute mobility of children from poor families only reduces the relative mobility in society if the absolute mobility of children from rich families does not increase as much. These measures purposefully ignore income inequality (the distance between ranks in the income distribution) in order to isolate a pure measure of economic mobility.

Further, it is unclear whether high mobility is achievable without a modicum of equality of outcomes (not limited to income) among parents, as parental resources are a key input into child outcomes. Landersø and Heckman (2016) show much higher levels of Danish intergenerational income mobility despite the fact that intergenerational educational mobility is similar to that of the US; rather, the compression of labor market outcomes (e.g., a lower return to education) is an important contributor to high Scandinavian mobility. Recent work by Ward (2020) suggests that increased full-cohort mobility in the 20<sup>th</sup> century US came alongside the enormous “Great Compression” in income inequality, which includes large educational expansions as well as changes in labor market institutions. The contemporary US is both high in inequality and relatively low in mobility relative to other advanced countries, but it is not clear that, holding the average fixed, a very unequal society with a high degree of mobility is preferable to a more equal society with moderate mobility.<sup>4</sup> Unequal income and wealth bring unequal ability to exercise self-determination and influence on the politics of one’s community, and private power in certain markets (Anderson 2019). Whether the few with great power grew up rich or poor matters little to the many with little power.

We began this project before the COVID-19 pandemic sent the US into a deep recession, but we conclude it in a changed world. The findings presented here

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<sup>4</sup> Saez and Stancheva (2016) show that a tax system that equalized incomes within parental income percentiles would, in fact, be more regressive at the top than one based on utilitarian objectives, simply because many of the top income earners have parents who were “just” upper-middle class (i.e., the top 1 percent and top 0.01 percent have basically the same parental incomes). Trannoy (2019), on the other hand, shows that the optimal tax to implement equality of opportunity where talent is endogenous would be a radically Rawlsian tax.

suggest that educational and skills requirements on posted jobs will increase as the weakened economy allows employers to be more selective in their hiring. As a result, we will likely see a renewed call for programs that focus on skill upgrading (like the #FindSomethingNew campaign the Trump White House announced earlier this year) to solve persistently high unemployment.

But our review of existing research suggests that training programs are most effective at raising worker well-being and reducing inequality under a particular set of conditions connected to worker representation and power. Our hope is that this report can guide policymakers and philanthropists toward recognizing and supporting these kinds of training programs, rather than those that disproportionately benefit employers.

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## Theoretical Background

### AN INTRODUCTION TO HUMAN CAPITAL AND INCOME INEQUALITY

Economists have contemplated the economic returns to skill at least since Adam Smith. In the late 19<sup>th</sup> century, Alfred Marshall articulated the importance of both general and technical skill, the importance of parental investments and education for general skill, and the importance of on-the-job learning and apprenticeships for technical skill. Anticipating modern commentators on lifelong learning and the desirability of apprenticeships, Marshall wrote, “Technical education for the higher ranks of industry should keep the aim of developing the faculties almost as constantly before it as general education does . . . The old apprenticeship system



is not exactly suited to modern conditions and it has fallen into disuse; but a substitute for it is wanted.”

In the 20<sup>th</sup> century, the modern economic theory of training was developed by Gary Becker, among others. Becker made human capital a leading theory of the labor market. It offered key explanations not only for the rise in inequality but for the proper role of training in the economy. These ideas are the academic foundations of today’s persistent belief in a “skills gap” despite subsequent research qualifying them.

In the theory of human capital, a worker’s wages are mostly determined by their contribution to a firm’s output, their “marginal product.” Different workers are good at different tasks, and the value of the most productive task a worker is willing to do determines their wages. Education and training, as well as health and intrinsic ability, increase the productivity of workers at a variety of jobs, and thus increase a worker’s wages. The productive get paid their due, and so interventions to reduce inequality should invest in the human capital of the poor.

***There are other, institutional determinants of wages besides “skill,” which implies that levers beyond workforce development exist for raising wages.***

To be clear, we are not saying that skills and education are not important determinants of wages. The literature is very clear that returns to high school, community college, and college tend to be positive, and we do not survey this here.<sup>5</sup> Some of the effect of education may be due to pure credentialing: Tyler, Murnane, and Willett (2000) show that young white workers with the same GED test score nonetheless get higher earnings when residing in a state with a lower test threshold for obtaining the credential. Some of these estimates may be overstated due to the presence of negative spillovers when educational expansion is scaled (i.e., educating everyone may lower the rate of return on education for everyone). Yet education is a complex bundle of treatments that don’t all map easily into “human capital” or “skill,” and it includes things like job search, social networks, personality formation, and self-discovery. In addition, there are other, institutional determinants of wages besides “skill,” which implies that levers beyond workforce development exist for raising wages.

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<sup>5</sup> See Card (1999) for an early review and Heckman, Humphries, and Veramendi (2018) for a recent estimate.



For human capital to be the only determinant of wages (or job quality more broadly), an auxiliary assumption is that the labor market is close to perfectly competitive. When the market is competitive, which firm you are employed at does not matter. Under perfect competition, a worker is equally productive at and would receive roughly the same wage at every firm. Firms compete ferociously for every worker, and any firm that tries to pay below a worker's productivity immediately loses all its workers to another employer willing to pay that wage.

The connection between human capital and inequality was made to explain the growing college wage premium during the late 20<sup>th</sup> century and has since been expanded (and perhaps overextended) to account for diverse patterns of inequality. The key observation is this: In a competitive labor market, the relative wages of college and noncollege workers should move together with the relative quantities of college and noncollege workers, suggesting that inequality can be explained by the relative supply and demand of college-educated workers.

The fact that relative quantities of college-educated workers have increased even while the college premium increased in the 1980–2000 period, it is argued, results from technological innovations increasing demand for college-educated workers faster than the supply of college-educated workers. Important subsequent research has supported this contention. For example, in *The Race Between Education and Technology* (RBET), Goldin and Katz—building on Katz and Murphy (1992)—argue that increases in the share of college-educated workers should decrease their wage relative to workers with less formal education, if relative demand is constant.

Economists have largely attributed this increase in demand for college-educated workers to changing technology, especially information technology (Autor, Katz, and Krueger 1998). The “skill-biased technical change” (SBTC) literature has subsequently argued that changing technology can account for a variety of patterns of inequality. A more nuanced variant of SBTC can account for “job polarization,”<sup>6</sup> where traditionally middle-wage jobs (routine cognitive or manual jobs) have been more vulnerable to automation, polarizing the employment distribution toward low-wage and high-wage jobs (Acemoglu and Autor 2011). Technological changes, it is argued, have led to jobs being concentrated in highly paid “innovation-intensive” sectors, service jobs that cater to the tastes and needs of the rich, and then “last mile” jobs where automation is too difficult for now (Autor and Salomons 2019). As automation accelerated and extended beyond

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<sup>6</sup> There is a debate, though, about whether job polarization is even happening; see Hunt and Nunn (2019).

manufacturing into retail and other sectors, demand for routine tasks fell even faster.

Technology certainly affects wages. Detailed case studies of adoption of new technologies, reorganization of work, and changes in demand for skills cover sectors such as banking (Autor, Levy, and Murnane 2002) and valve manufacturing (Bartel, Ichniowski, and Shawal 2007). There are documented correlations across firms in technology investments (computerization, automation, etc.) and changes in labor demand by education and skill group, as in Autor-Katz-Krueger (1998), Autor-Levy-Murnane (2003), and Bartel-Lichtenberg (1987), although Dinardo and Pischke (1999) deflated some of these claims by showing that cross-worker returns to the use of “pencils” had also increased. Compelling direct evidence on the effect of technology on inequality comes from the spread of broadband in Norway (Akerman, Gaarder, and Mogstad 2015); changes in UK tax incentives for investment in technology that differed across firms (Gaggl and Wright 2017); Medicare reimbursement changes and different incentives for hospital to adopt new technologies impacting skill demand (Acemoglu and Finkelstein 2008); geographic variation in industrial robot demand (Acemoglu and Restrepo 2019); and the rise of superstar earning effects with the growth of television (Konig 2020).

Technological change can also help explain the increase in the capital share of income. “Skill-capital complementarity”—where capital goods raise the returns to education and education raises the returns to capital—can account for the increase in both within-labor inequality (i.e., between skilled and unskilled) and between labor and capital (with an increasing share of income going to capital) (Krusell et al. 2000). But the increase in capital share is larger and faster than what could be captured by this mechanism and likely owes a lot to both ongoing deunionization and the rise of “superstar” monopoly firms (Farber et al. 2020; Autor et al. 2020).

The commentary on “skills gaps” naturally finds theoretical support in the SBTC and human capital perspective. According to this perspective, a primary source of wage and income inequality is low demand for low-skill workers, driven by technological change; and so the solution is policy to “up-skill” the workforce, investing in the human capital production chain from early childhood through mid-career. This has the virtue of being a win-win solution, raising wages and delivering employers the workers they want, and leading to increases in aggregate income while reducing the income differences between educational levels.<sup>7</sup>

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<sup>7</sup> However, it is important to note that additional human capital would only change the level of aggregate income, not the growth rate, as in Solow (1956).



Yet over the long run, there are empirical holes in the SBTC account. Goldin and Katz conclude that the “Great Compression” between 1940 and 1950, the biggest fall in American inequality in the historical record, is poorly accounted for by changes in human capital (Farber et al. 2020). Inequality fell by far more than can be explained by changing education alone. Similarly, the simple college-noncollege model does poorly in explaining changes in wage inequality during the 1970s.

Changes in skill and technology alone also struggle to explain recent changes in inequality, particularly the explosion in top incomes (which, within the OECD, have increased enormously only in the Anglophone advanced countries, not the bulk of European or Asian advanced economies). The “job polarization” account—the argument that middle-wage jobs are the most vulnerable to automation—is difficult to square with the timing of changes in the wage distribution and the college premium. The college wage premium has arguably stagnated since 2000, even as income inequality has increased (Mishel, Schmitt, and Shierholz 2013; Hunt and Nunn 2019).

***Changes in skill and technology alone also struggle to explain recent changes in inequality, particularly the explosion in top incomes.***

A 2013 study by Beaudry, Green, and Sand showed that the demand for cognitive tasks often associated with higher education levels began declining around the year 2000, even as the supply of workers with more education continued to grow. As a result, highly educated workers fell down the occupational ladder and increasingly performed jobs previously dominated by less-educated workers. This then pushed less-educated workers even further down the occupational ladder. Beaudry, Green, and Sand argue this evidence suggests that organizations need only a fixed stock of “high-skill” tasks done, and so eventually, demand for a flow of new skilled labor will fall, as processes of automation and reengineering are completed.

In a recent update to *The Race Between Technology and Education*, Autor, Katz, and Goldin (2020) conclude that, in recent decades, the role of supply and demand in explaining wage inequality has substantially diminished. They write, “The rise in the returns to college education explains a far larger share of the increased log hourly wage variance from 1980 to 2000 than it does from 2000 to 2017, accounting



for 75 percent in the first period but just 38 percent more recently.” However, they reiterate the focus on technological determinants of inequality, writing that “large within-industry and within-firm shifts to more educated workers in the face of rising educational wage differentials strongly suggest SBTC.” In fact, even the within-industry and within-firm changes in inequality could be accounted for by changes in unmeasured norms, HR practices, market structure, and other variables besides technology. Even granting the two-skill, competitive pricing model as empirically correct, labeling the residual from log-relative wages on log-relative quantities, “technology” masks a variety of other important forces buried in the labor demand curve.

Other recent work has plugged holes in the human capital account by emphasizing the importance of “soft skills” and personality characteristics. While previous definitions of “skills” largely focused on cognitive skills, this new literature has argued that “soft skills”—including personality characteristics such as extroversion, conscientiousness, and “grit”—are increasingly important to employers. For example, Deming (2014) finds that the returns to social skills have increased more than cognitive skills since 2001, but that the returns are highest for those in occupations that use both cognitive and social skills intensively. Further, while these pro-social traits are often labelled “skills,” it is important to note that they are likely more sensitive to team composition and situations: Whether someone “works well in teams” likely depends on the team. Almlund et al. (2011) argue that personality traits are at least as predictive of log hourly wages as IQ—which they argue is also influenced by personality (e.g., grit on IQ tests)—and are indeed more so for low-education workers. Importantly, personality traits are more malleable in young adults and thus potentially responsive to training and other interventions. We return to the social desirability of this below.

The fact that technological change contributes to increased inequality can easily get twisted into arguments that technology alone is the primary driver of increased inequality and arguments that overlook how technological change itself is the product of policy decisions. After the Great Recession, many commentators conjectured that persistently high unemployment would be permanent due to threats of automation and further globalization of manufacturing and services. We are now seeing similar predictions in the face of COVID-19.<sup>8</sup> However, as the

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<sup>8</sup> The slow decline of brick-and-mortar retail, for example, is likely accelerated by COVID-19. But while automation will take over some sectors, new tradable services will also likely arise as we move more functions online. Further, the exodus of tech and skilled workers from urban hubs, should it become permanent, will likely create new demands for low-education workers in construction and caring labor jobs, especially in suburbs and smaller towns. In short, while automation of some tasks will inevitably hasten due to COVID-19, a long-term “job apocalypse” after the pandemic is over is far from a given.



recovery from the Great Recession proceeded and the employment-population ratio approached historical highs (without any large-scale skill investments), the argument that American workers were unemployable due to skills gaps became difficult to sustain. Instead, the importance of cyclical factors came to dominate the perceived shortages of skills as an explanation for earlier disemployment. Similarly, it should be obvious that the rise of disemployment and massive losses of labor income during the current pandemic recession are not primarily due to a sudden lack of worker skill.

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## HUMAN CAPITAL AND TRAINING

If inequality is driven primarily by a lack of human capital among low-wage workers, the best way to decrease inequality would be investing in training to make workers more productive and attractive to employers who would then pay higher wages. While the bulk of human capital accumulation occurs prior to entry into the labor market (motivating a large, existing literature on early childhood interventions and schooling), there would still be an important role for job training in adulthood.

Becker distinguished between general and specific training. In his view, general training created skills that were portable across employers, while specific training created skills only valued by a particular firm. The implication was that employers should pay for specific training, while employees should bear the cost of general training. Competition in the labor market would ensure that employees received the value of their general skills training and keep firms from appropriating it. At the other extreme, competition for workers among employers is necessary to ensure that a firm bears the full costs of firm-specific skills training (Gallup 2020).<sup>9</sup>

<sup>9</sup> A difficulty in empirically assessing Becker's theoretical distinction between general and specific skills is that it is not clear which skills are which type. Is using Excel or Salesforce a general or specific skill? A clear case of general skill provision by employers is tuition reimbursements. A Gallup survey of workers found that 21 percent of the bottom quintile of workers and 60 percent of the top 50 percent of workers by income were offered tuition assistance benefits in 2019.



Those who view worker acquisition of general skills as crucial to addressing inequality see the key market failure as credit constraints that keep workers from financing their own training. Credit constraints are surely an important failure in the market foreducation, and one that could be remedied not just by expanding financial access but by redistributing wealth (wealth can be used as collateral to obtain better terms on, for example, student loans). The economics and policy issues in educational finance are ably documented in Lochner and Monge-Naranjo (2012) and Goldrick-Rab and Steinbaum (2020), among many others, and we will not cover them here.

Training could also target “soft skills.” Indeed, Almlund et al. build on Becker’s theory of training, arguing that personality traits are more malleable than cognitive traits and are therefore promising targets for training interventions. However, even if interventions could alter personality traits (e.g., cognitive behavioral therapy), such interventions might challenge basic respect for persons. A critical tradition in education, articulated in economics by Bowles and Gintis (1973), has pointed out that employers want schools to produce good workers, not necessarily good citizens or well-rounded human beings with capacities to execute their life plans. The personality traits that employers demand (e.g., responsiveness to monetary incentives, willingness to follow authority) may not be the ones society should inculcate, particularly a society that demands a high degree of cultural and technical creativity.

Further, there may be tensions with the educational needs of a democratic society, in which voters presumably require some basic general knowledge about the world, even if it is not directly productive nor meeting the specialized needs of employers. The political externalities of education may be even higher in a media environment filled with numerous false claims. A society or an employer intent on reprogramming its citizens’ personalities to be uniformly more economically productive may strike some as positively dystopian.<sup>10</sup> Schooling has been shown to have positive effects on crime reduction and voting propensity, for example (Lochner and Moretti 2004; Sondheimer and Green 2010).

Since the 1970s, some economists have worried about the expansion of the concept of human capital beyond concrete skills and into all economically productive dimensions of a person. For example, Bowles and Gintis (1976) stressed that employers might demand educated workers not simply because of their additional skills but because educational credentials make managerial authority more credible, make workers more responsive to pecuniary incentives (with student loans exacerbating the responsiveness), or may be used as a device to create arbitrary divisions within a

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<sup>10</sup> From the perspective of this report’s main point that the labor market context governs the potential for training to increase workers’ income and reduce inequality, the distinction between cognitive, technical, and social skills is not particularly meaningful. That said, the provision of mental health services, particularly as a component of health care more broadly, may have particularly high returns that have not been explored or quantified.

workplace to impede collective demands. If this is the case, how and where workers acquire “educational credentials” is as important to employers as any particular set of productive skills.

## AN INTRODUCTION TO LABOR MARKET POWER

*The theory of monopsonistic, rather than highly competitive, labor markets offers an alternative theory for understanding determinants of a worker’s earnings and yields different implications for the value of skills training.*

The human capital interpretation of worker skill focuses on the investments made in, and by, workers themselves as the determinants of wages and productivity. There is a tight link between the theory of human capital and the assumption that labor markets are highly competitive: If any employer tries to pay a worker less than what their skills add to revenue, another employer will immediately bid that worker away, and so competition will ensure that compensation keeps pace with increases in worker skills and productivity. The assumed stiff competition for workers implies that the primary determinants of a worker’s earnings are properties of the worker themselves (e.g., skills held) rather than institutional determinants such as the employers, co-workers, or social networks to which a worker has access. But from the point of view of a worker, jobs as good as the one they have may be few and far between, not immediately available as perfect competition assumes. The theory of monopsonistic, rather than highly competitive, labor markets offers an alternative theory for understanding determinants of a worker’s earnings and yields different implications for the value of skills training.

Rather than thinking of the labor market as simply and reliably ensuring that workers’ compensation equals their marginal productivity, it is worthwhile to unpeel the concept of the labor market into its constituent parts. On one side are employers needing workers’ skills, attention, and time to make goods and services that customers value but limited in the extent to which they can differentiate pay due to lack of information, internal administrative constraints,



and considerations of internal equity and shop floor relationships. On the other side are workers, who have to balance their jobs against all of the nonwork dimensions of their lives: providing care to family members not in the workforce, balancing civic and nonwork activities, and handling the bumps and shocks of a society with unreliable social insurance and public goods. Many barriers inhibit workers' ability to costlessly find a perfect substitute for the job they have. These include personal obligations and circumstances that are inherent in the fact that workers are people, with attendant nonwork life conditions that may limit their responsiveness to wage differences or other job opportunities (e.g., in new locations). These may also include additional employer-imposed constraints such as covenants not to compete, no-poaching agreements, and informational constraints such as nondisclosure agreements that make potential new jobs difficult to reliably assess. These barriers to job mobility create employer market power and limit workers' bargaining power by reducing their ability to harness competition between employers.

The result of the two sets of frictions is what economists call *monopsony*.<sup>11</sup> Monopsony is the combination of the absence of immediate substitute jobs in the labor market for workers and the presence of internal constraints on employer wage policies that keep them from differentiating wages too much across workers who differ in their outside prospects. Monopsony implies that employers choose wages to balance costly turnover against costly payroll and choose to bear additional turnover in order to economize on payroll. In contrast, an employer with market power who can differentiate pay based on workers' outside prospects could engage in a different monopsonistic strategy. Absent internal equity constraints, they would try to pay each worker the least amount possible.

***Monopsony is the combination of the absence of immediate substitute jobs in the labor market for workers and the presence of internal constraints on employer wage policies that keep them from differentiating wages too much across workers who differ in their outside prospects.***

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<sup>11</sup> We do not think monopsony is the only form of power in the labor market, but it is the one with the most empirical evidence behind it. Many of our arguments just depend on wages being set below marginal productivity and above the outside option, with the relative weight being a measure of bargaining power. Further, monopsony can't account for involuntary unemployment, and the resulting credible threat employers have to fire workers. Labor discipline models (Shapiro and Stiglitz 1984; Bowles 1985) may supply the missing ingredient, where workers are paid more than their outside option (but possibly still less than their productivity when combined with monopsony), and so the threat of firing is credible and costly and is what incentivizes a worker to exert effort.

In the competitive view of the labor market, the turnover response to a wage cut is enormous. Any firm that cuts its wage by a small amount sees its workers leave quickly and is unable to recruit new workers. The availability of linked worker-firm data from administrative sources has allowed this core proposition of the “law of one price” in a competitive labor market be put to the test. How much does labor supply change in response to changes in wages? The percent change in labor supply that would occur in response to a 1 percent change in wage—the labor supply elasticity—is a key parameter describing the competitiveness of a labor market. While a frictionless labor market would have a very high elasticity—above 10—the evidence discussed below suggests that the elasticity in the US low-wage labor market is between 3 and 5, consistent with imperfect competition and substantial degrees of employer market power.

## EMPLOYER MONOPSONY CHARACTERIZES LAISSEZ-FAIRE LABOR MARKETS

It is important to recognize that monopsony is not the property of a few highly concentrated or artificially restricted markets, but rather pervasive and inherent across the broader labor market, even in markets characterized by high turnover. It is likely that most labor markets, and particularly low-wage ones, have a degree of monopsony, possibly with an exception of those with extremely institutionalized bargaining and recruitment mechanisms (e.g., professional sports, law, medicine, upper management). Goolsbee and Syverson (2020) show evidence that even tenure-track academics are subject to monopsony power. Bassier et al. (2020) estimate separations elasticities separately by sector and find the highest-paid sectors (e.g., FIRE) are the most competitive, but still exhibit considerable monopsony (residual supply elasticities of 5 vs. 2.5 for art, accommodation, and food). Importantly, they find their measure of monopsony power is largely independent of measures of employer concentration.

***Monopsony is not the property of a few highly concentrated or artificially restricted markets, but rather pervasive and inherent across the broader labor market, even in markets characterized by high turnover.***



While monopsony does not depend on there being concentrated labor markets (Naidu and Posner 2020)<sup>12</sup>, concentrated labor markets are a source of monopsony power, particularly in rural areas. Greater concentration of employment among fewer employers in a labor market can increase monopsony power for those employers, limit workers' outside options, and lower wages. Consolidation in rural agriculture, mining, and manufacturing all result in concentrated local labor markets in small towns in the US, and this has been shown to lower wages in these markets (Arnold 2019; Prager and Schmitt 2019). But it is important to reiterate that monopsony can be an important force even in dense, urban labor markets, owing to thin labor markets for particular jobs.

Labor market monopsony offers an alternative explanation for the complaints from businesses about skills gaps. A prevalence of labor-hungry employers who struggle with shortages but are unwilling to raise wages is a distinct prediction of monopsony, since in this model, employers make profits from the gap between a worker's marginal productivity and their wage. Monopsonistic employers may be reluctant to raise their new-hire wage offer because internal wage-setting constraints (e.g., equity) would then pressure them to raise wages for incumbent workers and cut their profits from the productivity-wage gap among incumbent workers. Colluding and cartelized employers would always want more workers at their artificially low wages. Employers with monopsony power in the labor market find it profit-maximizing to pay inefficiently low wages and to employ inefficiently few workers. Thus, Shierholz and Gould (2018) suggest that employers may perceive and complain about a shortage of skilled workers because of their unwillingness to raise wages. While there is a shortage of workers at the wage the employer is offering to pay, there would not be a shortage if the employer increased their wage offer to match worker productivity.

A test of monopsony conducted by Ernesto Dal Bo, Federico Finan, and Martin Rossi (2013) put this theory to the test with an experiment that randomized wages posted in recruitment for public-sector jobs in Mexico and found that higher wages induced a higher supply of skilled applicants, as well as more pro-social ones. For each 1 percent increase in their wage offer, the supply of labor increased by an average of 2 percent, an overall labor supply elasticity of 2. Similar experimental estimates of this parameter for private-sector, low-wage labor markets in the US do not exist,<sup>13</sup> but quasi-experimental estimates in Dube, Giuliano, and Leonard (2019) and Dube, Naidu, and Manning (2020) suggest a value

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<sup>12</sup> The results from Dube, Giuliano, and Leonard (2019) and Dube, Manning, and Naidu (2020) suggest that there is significant monopsony power even in urban, low-wage labor markets, even where there are many employers.

<sup>13</sup> Caldwell and Oehlsen (2019) and Dube, Jacobs, Naidu, Suri (2020) find experimental estimates in gig labor platforms of 4–5 (Uber) and 0.1–0.5 (MTurk).



of around 4.5, and most estimates lie between 3 and 5 (Sokolova and Sorenson 2018; Manning 2020; Bassier, Dube, and Naidu 2020).

## MONOPSONY AND WORKERS IN THE HEALTH-CARE AND TECH INDUSTRIES

Sectors with potentially quite severe monopsony power include those often thought to have the largest potential for job growth. Health care and tech are two industries often featured in workforce training programs because they are perceived as high-growth and high-wage industries. Yet there is strong evidence of monopsony hurting workers in these industries in recent years.

In the health-care industry, beyond the open collusion that has been documented in some hospital systems, an increase in hospital mergers over the past 20 years has resulted in a slowdown in wage growth. Where there is increased market concentration post-merger, there was evidence of reduced wage growth. Adjusted for inflation, wage growth has slowed between 1.1 and 1.7 percentage points (Prager and Schmitt 2019, 3). By examining the impacts of hospital mergers on unskilled workers, skilled workers whose skills are not specific to health care, and skilled health-care professionals, Prager and Schmitt found that four years after a merger, wages were estimated to be 6.3 percent lower for pharmacy workers and nurses than they would have been without a merger in the top quartile of concentration-increasing mergers (2019, 3). Indeed, wage growth reductions were more than 25 percent of baseline wage growth rates.

In the tech industry, companies like Apple, Google, Facebook, Airbnb, and Uber have edged out former competitors with cheaper and easily accessible services, effectively serving as monopsonies in addition to monopolies. The tech industry has flexed its power not only within the consumer market but also the labor market. Beyond widespread use of noncompetes (Balasubramaniam et al. 2020), open collusion has been documented. In 2005, the tech firms Apple, Google, Intel, Adobe, Intuit, and Pixar were able to keep workers' wages low by colluding with each other (Konczal 2014). By agreeing to set wages at a specific threshold and not recruit from each other, these firms effectively created a labor cartel, shoring up their labor market power within an already highly consolidated sector. Unfettered monopsony power within these industries has reduced mobility and wages for labor market entrants in addition to the existing market frictions that already limit workers' choices.



It is not clear that monopsony power has increased over time, but that is also not necessary to make monopsony an important force for explaining inequality. Webber (2014) finds that the residual supply elasticity facing firms has fallen over time (and is pro-cyclical). Rinz (2018), Qiu and Sojourner (2019), and Arnold (2020), among others, argue there has been no trend in local labor market concentration. It is important to also recognize that turnover on its own is not evidence of competition: Turnover could be high because low-wage workers have innumerable other shocks in their lives (from childcare hiccups to eviction to incarceration of relatives and friends) that make it hard to hold a job. Monopsony merely says that the turnover is not highly sensitive to employer wages and working conditions, not that it is low.

It is clear that the scope that employers have to exercise the market power they do hold has increased over time, as argued by Erickson and Mitchell (2007). In an economy without unions, without strong internal labor markets, and with low-cost worker performance monitoring, the forces that may have restrained employers from exercising the latent market power they held (collective bargaining agreements, implicit seniority rules, within-firm equity norms, and efficiency wages) have diminished. It may not be that monopsony has gone up, but it is certainly true that the countervailing forces have declined.

Another important potential contributor to monopsony power is the increasing share of employer-provided health care in compensation. A number of papers (e.g., Kent et al. 2020; Farooq and Kugler 2019; Madrian 1994) have documented the role of health insurance in reducing employee mobility, with workers with health risks (or dependents with health risks) being much less willing to switch employers, although none to our knowledge have calculated the extent to which this lowers job mobility in response to wages, which would yield the effect on employer market power. We suspect it is substantial.

***In an economy without unions, without strong internal labor markets, and with low-cost worker performance monitoring, the forces that may have restrained employers from exercising the latent market power they held (collective bargaining agreements, implicit seniority rules, within-firm equity norms, and efficiency wages) have diminished.***





Summers and Stansbury (2020) argue that the decline of worker rents, not increases in market power, can account for the fall in the labor share. Empirical quibbles aside, this is consistent with the view that the countervailing forces on monopsony have weakened, and so we can now observe monopsony more clearly. As an example, suppose the relevant technological change is that employer monitoring and performance measurement<sup>14</sup> improved in “middle skill” jobs, and thus reduced the rents available in those jobs as well as facilitating outsourcing. This would exacerbate any latent monopsony by cutting into the incentives to pay more than the outside option. This isn’t “skill-biased” technological change, but it reduces worker wages and increases inequality nonetheless. Unfortunately, empirical evidence on the labor discipline model is sparser than that of monopsony.

Employers’ labor market power allows them to pay workers with different individual productivities the same amount and allows firms with different marginal products for the same worker to coexist in the same labor market, neither of which would be possible in perfectly competitive labor markets. Monopsony can thus help explain many of the gender and race inequities we see in the US labor market (Stelzner and Bahn 2020).

First, the gender pay gap is the original explanandum of monopsony theory. Joan Robinson (1938) argued that marriage and childcare expectations made working women less likely to move in response to job offers. Employers, knowing this, would pay women less because they would be less concerned about women quitting. They might also perpetuate sexist rationales for paying women less to loosen workers’ internal equity concerns. Notably, however, empirical evidence on the connection between the gender pay gap and monopsony is mixed and limited (Caldwell and Oehlsen 2019; Manning 2011).

Second, racial wage inequality gets rethought under monopsony. Generally competitive labor markets imply that employer racism cannot persist: Any employer who does not want to pay Black workers a high wage will lose talented workers to other, non-discriminating employers, effectively bidding away workers. The discriminating employer will then be unable to survive against non-discriminating competitors. The reality of pervasive racial discrimination in the labor market should undermine belief in this theory.

But how should we understand the persistence of racial discrimination in wages? With employer market power, employers who arbitrarily pay Black workers less may survive given the relative absence of cutthroat competitors for those workers. Indeed, the

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<sup>14</sup> MacLeod, Lemieux, and Parent (2006) suggest it is important for explaining the increase in performance pay.



racist employer would contribute to depressing wages for Black workers broadly. Even a non-discriminating employer would then have a margin by which they could pay Black workers less, knowing that the outside option of those workers is lower owing to the presence of discriminating employers (Black 1995). Beyond labor market options, the reality of the racial wealth gap means that employers know that Black workers have fewer resources to fall back on, and so unemployment is costlier. Racial inequality in criminal justice enforcement can also generate self-perpetuating racial differences in outside options. The observations about color penalties noted in stratification economics (Darity 2005) become legible as “tags” for worse outside options, just as in the case of gender.<sup>15</sup> A monopsonist interested in lowering their wage bills will use tags of race, among others, to pay different workers different amounts, even if they have the same productivity.

These observations regarding monopsony and pay differentials across gender and race should give us pause about the ability of skills training to address all forms of persistent inequality.

## LABOR MARKET POWER AND TRAINING

With respect to training and skills, considering unregulated labor markets as monopsonistic brings nuance to Becker’s formulation, relaxing the assumption of competitive labor markets. It encourages us to consider how employers’ labor market power affects workers’ incentives to independently acquire training, and, likewise, employers’ incentives to provide training. It also raises questions about how training programs might affect the relative labor market power of workers and employers.

Indeed, the interaction of training and imperfect competition was noted even before Becker, in Arthur Pigou’s *Wealth and Welfare*, Pigou points out that if employers would compete with each other, training would be undersupplied because of what would later be called the “poaching externality” (Stevens 1994a). Becker assumes this away in his taxonomy of skills: General skills have no externality because every firm values them identically, so wages get bid up to the value of training, and workers are willing to pay for them (either as foregone wages as a low-wage “trainee” or via financing education); specific skills have no externality because they are valued by only one firm.

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<sup>15</sup> There are many other dimensions around race and labor market power we do not go into here. Beyond simple employer and customer discrimination, there are numerous systematic and interlocked forces generating worse labor market outcomes for Black people in America’s racial capitalism, including segregated schools resulting in less access to quality education and lower wealth.

The poaching externality is why employers will not invest enough, particularly in transferable skills, and that creates a need for policy or intermediaries.<sup>16</sup> Difficulty retaining skilled workers makes investing in skills a losing proposition for any individual employer, as the worker may just hop to another employer. Sectoral employment programs, as we survey below, coordinate skill investments in workers for a group of firms, effectively coordinating training in order to provide employers with a labor force they cannot invest in on their own. The danger, of course, is that institutions that coordinate employer training may also coordinate employer wage-setting.

With respect to workers, employer market power acts as a particularly regressive tax on human capital acquisition, as wages will not fully reflect worker productivity. Because workers are paid below their marginal product in a monopsonized labor market, their incentives to invest in schooling or training are diminished relative to labor markets that pay closer to productivity. Confronted with low wages and blunted returns to their own productivity, workers might drop out of school earlier than is ideal.<sup>17</sup> Even if schools provided no human capital, schooling can provide additional options to workers by providing credentials that enable them to signal their productivity, as well as providing social networks and matching services (and broadening aspirations) that increase the set of outside options a worker contemplates when deciding on a job or bargaining over a wage.

***Sectoral employment programs, as we survey below, coordinate skill investments in workers for a group of firms, effectively coordinating training in order to provide employers with a labor force they cannot invest in on their own. The danger, of course, is that institutions that coordinate employer training may also coordinate employer wage-setting.***

With respect to employers, the flip side of the observation that employer market power reduces worker investments in skill is that the same power gives employers an incentive to invest in workers' skill even when that skill increases productivity

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<sup>16</sup> There is a natural symmetry with “aggregate demand externalities” as in “Big Push” theories of development.

<sup>17</sup> The lopsided distribution of power in the labor market might help explain the educational attainment slowdown. Indeed, it is a puzzle that just as the premium to college was increasing over the 1980s, college completion rates slowed. There may be some role for an increase in employer power (e.g., deunionization, improved monitoring and surveillance at work, and merger activity) to account for this endogenous lack of skill acquisition.

of a worker for other potential employers, because they can still appropriate some of the benefits given workers' lack of mobility due to market structure. But because workers are not completely immobile, employers can only appropriate some of the returns from training, and thus will underinvest relative to the social optimum.

Becker's 1961 text on human capital implicitly acknowledges the importance of labor market power. Becker pointed out that if workers could quit, specific skills would be undersupplied, as firms would be worried about replacements. Further, workers with specific skills could threaten to leave, and employers would in fact pay them higher wages to retain them.<sup>18</sup> But Becker did not pursue the full implications of the dependence of quits on wages: Indeed, the fact that employers can affect the quit rate by choosing the wage is in fact the signature of monopsony.

Stevens (1994b) develops this analysis of the "poaching externality" by looking at "transferable training," which is neither perfectly portable nor perfectly specific. She notes that implicit in the definition of "specific" skill is a claim about the degree of employer competition. Indeed, this observation is even in Becker, who notes that in a company town with one employer, all training is specific, regardless of the content of the skill. And when there are many other nearby employers who value a given firm's training, that skill becomes "general," again independent of the content of the training. Stevens further shows that employers have an incentive to overinvest in the specificity of training, as the specific training decreases turnover as well as raising productivity.

Picking up on this theory, Daron Acemoglu and Jorn-Steffen Pischke argue that when employers have market power, they might be quite willing to train workers in general skills because they can appropriate the value of those investments (1999).<sup>19</sup> While more general training is provided relative to specific training in monopsonistic labor markets, the overall level of training is indeterminate.

Acemoglu and Pischke suggest that two kinds of labor market equilibria could emerge under monopsonized conditions: In a low-road equilibrium, firms pay low entry wages, accept high voluntary quit rates, and invest little in general training for their workers because they don't expect to reap any benefits of the training for long. In a high-road equilibrium, firms pay high entry wages, have low quit rates,

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<sup>18</sup> Hashimoto (1980) investigates this idea formally.

<sup>19</sup> Acemoglu (1996) presents a model where matching frictions create a two-sided externality: Workers don't invest in specific skills because they don't know what firm they will match with, and firms don't invest in capital because workers aren't investing in skills.

and, thus, are more willing to invest in training.<sup>20</sup>

In other papers, Acemoglu and Pischke (1998a, 1998b) show that this incentive to invest in general training could be obtained under a variety of wage compression schemes in which employers capture some of the rents. For example, because unions want to incentivize firms to invest in training, they may compress wages so that the most skilled workers are paid less than their marginal product. Thus, unionized firms would invest more in training owing to within-firm wage compression. For another example, the minimum wage might give firms an incentive to train workers whose productivity would otherwise be below the minimum wage. There is mixed evidence on both of these effects.

While Acemoglu and Pischke's model is specific, their evidence is from German apprenticeship data, and the conclusion that low turnover and high skill investments are complements is likely a general insight. Consistent with the idea that low employer competition could result in increased general training (relative to specific training), a 2013 study of the US found that hospitals in labor markets with fewer competing employers are more likely to subsidize local training for nurses (Benson 2013). On the other hand, Booth and Bryan (2005) for the UK and Loewenstein and Spletzer (1999) for the US find that employers value training offered by previous employers more than their own training. One object of policy intervention in the US could be shifting labor markets from the low-road to the high-road equilibrium.

While monopsony has been proposed as an explanation for why employers would supply general training, little of the literature has examined whether training could itself alter the degree of monopsony power. An alternative link between market power and training comes by analogy to the famous Spence (1976) model of a monopolist's choice of product quality: Training can be oversupplied because it enables the employer to pay all workers a lower wage without losing them. Just as products have different features that consumers may value differently, jobs have amenities that workers value differently. Companies choose what features to add to a product so that they can raise the markup of price over cost without losing (and even gaining) customers. Similarly, employers can choose how much training to supply based on how much training facilitates recruitment and retention without having to raise the wage. Given a choice between a dollar of wages or a dollar of training benefits, the average worker might prefer the dollar of

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<sup>20</sup> While the low quits signify monopsony power, in their model's low-quit equilibrium, the ex-post monopsony power employers get is compensated by high entry wages and extensive general training investments.

wages, but the worker who the employer is most worried about losing may prefer the dollar of training benefits.

A further labor market extension on the Spence idea comes from Weyl and Veiga (2017), who add a “cream-skimming” motivation into a firm’s choice of product quality.<sup>21</sup> In the training program context, we might expect a bifurcation of training provision with employers either over- or under- providing training depending on the correlation of workers’ valuation of training with their productivity. Monopsonistic employers look at how their amenity choice (i.e., the benefits they offer) affects both the retention and recruitment of workers, as well as the productivity of workers on the margin of joining or leaving the firm. Among workers who are indifferent between staying or leaving, do more-productive workers tend to value training more or less than less-productive workers? If the more-productive workers value training more (as might be expected for some training programs), then training is over-provided as employers try to “cream-skim” and retain the best workers. But if more-productive workers value training less (perhaps because they already obtained it elsewhere), the employer will under-provide training, retaining only the productive. Training as a screening device for employers has been studied in hiring and retention (Statt 1998; Capelli 2004; Manchester 2012), in addition to evidence that caseworkers “cream-skim” applicants to job training programs (Bell and Orr 2002).

In an ongoing study, Dube, Naidu, and Reich (2020) test theories about employer amenity provision by running conjoint experiments with Walmart workers recruited over Facebook to measure how much workers value different amenities in these experiments. Walmart was chosen as the employer for the study not only because it is the largest employer in America, but because it is geographically quite well-distributed, and its workforce is overwhelmingly composed of low-wage workers.

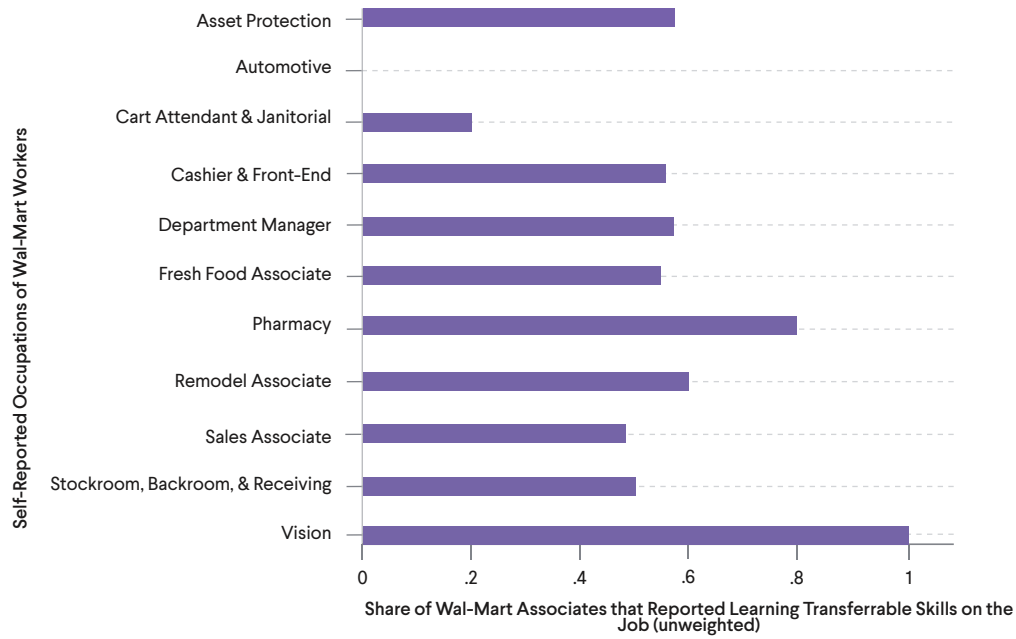
In terms of skills provided by Walmart, about 53 percent of Walmart workers in our survey report that they can learn transferable skills in their current job. We provide a breakdown by job below: Working in parts of the store like pharmacy and vision offers more opportunities to learn skills, but some workers report learning transferable skills across many different types of occupations. Consistent with much of the literature, there is no significant correlation between reported acquisitions of new transferable skills and reported wages, which

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<sup>21</sup> Consider an insurance company choosing plan features to offer in order to attract consumers who have a high willingness to pay (so the firm can increase the price) and who will be cheap to insure (so that the firm economizes on insurance payouts).

would be expected if workers were willing to take lowered wages in exchange for transferable skills, as in Becker.

**FIGURE 2: ON- THE-JOB TRAINING EXPERIENCES OF WALMART ASSOCIATES**



*Note: Frequency of training across jobs, from online surveys conducted by Dube, Reich, and Naidu (in progress).*

Furthermore, the opportunity to obtain new skills—measured as a binary response to “Do you learn transferable skills on the job”—was valued by workers, in terms of subjective willingness to quit for an alternative offer, but less than many other attributes (e.g., the opportunity to express themselves on the job). Indeed, new skills seem to be valued by workers about the same as having a supervisor who treats them with respect and fairness, or about as much as paid time off.

But in terms of job characteristics valued by low-wage workers, the Dube, Reich, Naidu survey suggests Walmart giving workers more hours would be most appreciated by workers<sup>22</sup> (and would not necessarily be that costly to Walmart, as presumably sales are generated by additional hours). Employers giving workers more hours and stable schedules may have a higher return for both workers and employers than training programs. Presuming that workers value training as

<sup>22</sup> A survey by Gallup found similar worker preferences for stable schedules and pay, albeit not from a randomized survey experiment.



much as or more than other productive workplace amenities might miss what workers actually want. A reliable channel of feedback between workers and employers could perhaps credibly convey workers' preferences for hours over skill investments, again highlighting the role of voice and institutions to communicate worker preferences to employers.

None of the studies discussed above consider the possibility that training programs themselves could be designed to alter the degree of employer market power. Depending on the content of the particular program, training might raise nonpecuniary worker attachments to particular jobs—for example, by instilling loyalty or discouraging searches for alternative offers or occupations. If some types of “training” itself increase employer market power by deepening workers' idiosyncratic attachments to an employer, then regardless of whether that training is general or specific, employers would have an incentive to over-provide it.

***None of the studies discussed above consider the possibility that training programs themselves could be designed to alter the degree of employer market power.***

This points to the overarching limitation of the training program agenda: Employers want to invest in training (and want others to invest in training for them) when they can capture a good share of the resulting productivity increases. This will result in higher wages, but also a higher rate of exploitation. They may do this if the market is already monopsonized, if the training program is particularly valued by the workers most likely to quit, or if the training program makes all workers less likely to quit at any given wage.

***Employers want to invest in training (and want others to invest in training for them) when they can capture a good share of the resulting productivity increases. This will result in higher wages, but also a higher rate of exploitation.***





If, on the other hand, training programs broaden social networks, certify skills, and widen employment opportunities, this reduces the attachment of workers to their current employer, and employers would have an incentive to under-provide it.

There is anecdotal evidence that employers understand these incentives and design training programs to increase their labor market power. For example, a 2008 report from the Society for Human Resource Management noted, “If you’re concerned that training will increase turnover in your organization, you may want to consider offering *job-specific* training (which is less transferable to other contexts) instead of more *generalized* training (which transfers easily)” (Allen 2008). Management has options to tailor training and knows it can choose those that minimize employees’ outside options.

***If training programs broaden social networks, certify skills, and widen employment opportunities, this reduces the attachment of workers to their current employer, and employers would have an incentive to under-provide it.***

On the worker side, programs that help laid-off workers find new, well-paying jobs might be rethought as a useful vehicle to counter employer market power. Programs designed to facilitate workers’ occupational mobility (like trade-adjustment assistance) can reduce employers’ labor market power. When the government makes a standing offer of effective training, job-search services, and other services to facilitate occupational transitions for anyone who wants it (e.g., an apprenticeship guarantee), this can improve laid-off workers’ earning prospects but also increase wages of incumbent workers by shifting bargaining power toward workers.

The interplay of labor market power and training is also important for policy debates around the use of noncompete restrictions.<sup>23</sup> The 2008 Society for Human Resource Management report suggests noncompetes as another option to increase retention. A rationale for covenants to not compete is that they incentivize employers to invest in workers’ skills, and that without such covenants employers would be unable to reap returns on these training investments. If an employer can show there was a legitimate business reason for the noncompete, it can be

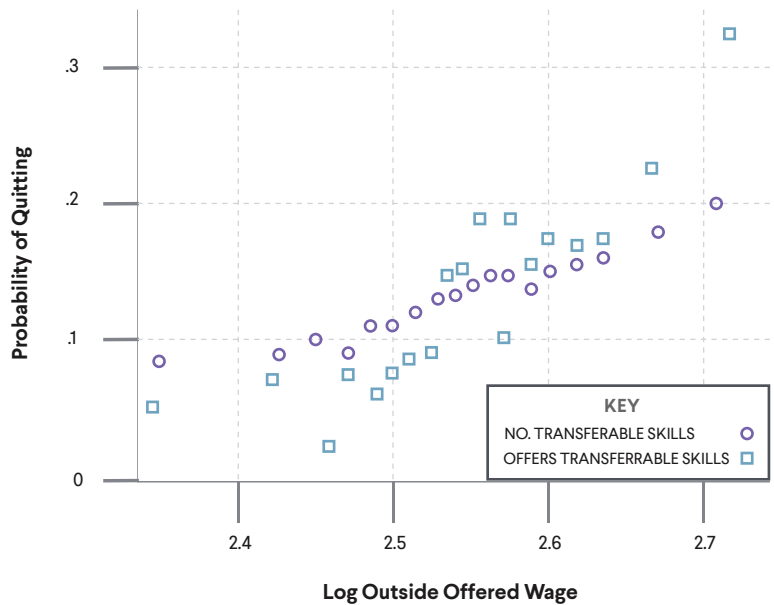
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<sup>23</sup> Rubin and Shedd (1982) argue that covenants to not compete can be rationalized as devices to ensure that firms invest in general human capital.

enforced in many states. Provision of costly, portable training may count as such a legitimate business reason. Thus, speculatively, some employers could even seek to expand training programs solely to obtain legal justifications for noncompete clauses.

Some evidence that employers may underprovide skills training because it makes workers more mobile can also be seen in estimates of the probability of a quit as a function of the wage. We plot this separately by whether workers report receiving transferable skills training on the job in the Walmart worker survey. The slope of workers' stated willingness to leave for a higher-paying job is steeper for workers who report learning transferable skills on the job. If this was a causal, general relationship (which this data cannot show) and employers were profit-maximizing, they would under-supply transferable skills, as providing them would make their employees more likely to quit in response to outside wage offers, and thus decrease the scope for employer wage-setting power.

**FIGURE 3: WORKFORCE TRAINING AND WORKER MOBILITY**



*Note: From online surveys conducted by Dube, Reich, and Naidu (in progress).*

In sum, we cannot take employer demands for skilled workers at face value. Employers with market power will always demand that more and better workers be subsidized by the public. Similarly, we should not rely on employers to provide



the socially optimal level of training on their own. Employers with market power will design training programs with an eye toward specific skills, but also with the aim of economizing on wage bill per unit of skilled labor recruited and retained, as well as “cream-skimming” high-productivity employees. Large employers and employer associations may design training programs that amplify their existing monopsony power, even as they also raise earnings; a training program that raises productivity while increasing the attachment of workers to a firm will increase worker earnings, but can also raise the rate of exploitation (the share of worker value to the firm claimed by the employer).<sup>24</sup> On the other hand, complementing training with enhanced outside employment options that break down employer market power should increase the share of new value going to workers, though it may undercut support for training from incumbent employers.

*Employers with market power will always demand that more and better workers be subsidized by the public.*

## Examining The Evidence

### IS THE SKILLS GAP A MYTH?

Human capital and monopsony both offer explanations for why Americans might believe there is a skills gap. But what do employers mean by a skills gap, and what evidence is there that our current economy is plagued by one?

In the wake of the Great Recession, academic economists began to express considerable skepticism about whether the US was experiencing a skilled labor shortage of any sort (Weaver and Osterman 2017; Cappelli 2015). The empirical evidence produced as the job market recovered undermined the idea that lack of skills drove unemployment. Average real wages showed no sign of a sharp increase after the end of the recession, which suggests that skills shortages are not widespread (Rothstein 2012). Furthermore, a simple examination of sectors thought to be facing persistent skills shortages, such as computer programming or health care, didn't reveal evidence of abnormal wage growth that should accompany persistent shortages of supply in competitive markets (Shierholz and Gould 2018). Similarly, changes in year-on-year employment and hourly wages for

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<sup>24</sup> This is a human capital investment spin on Joan Robinson's aphorism that the misery of being exploited by capitalists was nothing compared to the misery of not being exploited at all.

major industries are only weakly correlated (Abraham 2015), supporting the view that skills gaps are not a widespread phenomenon.

A pair of compelling papers by Modestino and co-authors (Modestino et al. 2019, 2016) provide evidence that, rather than facing a skills gap, as employers' labor market power increased during the Great Recession, they increased their skills demands. "Upskilling" and "downskilling" of skill requirements in job vacancy postings show that much of the skill demands of employers are cyclical in nature. As the labor market became slack during the Great Recession, employer skill requirements increased, as employers realized they could get high-productivity workers more cheaply. As the labor market tightened, the skill requirements on job postings fell (as documented in "Upskilling" (Modestino et al. 2019).

The Modestino papers define the "skills gap" broadly, which is also how the term is used in common parlance. For the purposes of analyzing whether or where a skills gap exists, it might be useful to define it more precisely, as in Peter Cappelli's 2014 paper. Cappelli distinguishes three types of gaps:

- **Skills shortage:** There is a narrow shortage of people with the training necessary to serve in specific high-demand professions and occupations.
- **Skills mismatch:** In a pair of markets defined geographically or on the basis of skills, improvements could be made by shifting workers or employers between markets, but some friction prevents this.
- **Basic skills gap** (what Cappelli calls a "skills gap"): There is a widespread shortage in basic skills that ought to be taught in the K–12 system and that most employers demand.

Looking more specifically at Cappelli's three varieties of skills gaps, what evidence do we find on their magnitudes and importance?

## Skills Shortage/ Skills Mismatch

Evidence for a skills shortage generally comes from employers who complain about hiring difficulties in surveys or increases in the vacancies-to-unemployment ratio. We discussed above why this survey evidence is likely to be misleading. More detailed surveys asking precisely what skills are needed and who can be hired to do them reveal much less difficulty in hiring than is often claimed in public (Osterman and Weaver 2017). It is also difficult to interpret shifts in the vacancies-to-unemployment ratio as evidence of skills shortages, as cyclical

factors tend to predominate in movements of the Beveridge curve. Finally, we see little evidence of wage growth in occupations claimed to be in short supply, which would be signature evidence of a true skills shortage. For example, even in software development, the median salary went from \$90,000 to \$105,000 between 2010 and 2018 (i.e., an annual growth rate of 2 percent, just over the inflation rate).

Skills mismatch could refer to a mismatch between workers' skills and their job requirements, or market-level mismatches between employer labor demands and available supplies, also called "labor misallocation" (Sahin et al. 2011). A variety of conceptual and measurement challenges make it difficult to operationalize this concept rigorously. The main obstacle is a transparent and credible counterfactual as to what the "correct" allocation of labor and skills in the economy ought to be. Researchers have made progress on this question by using macroeconomic models, but different models yield different results. It is also not clear that labor misallocation is a worse problem than capital misallocation or market power (Restuccia and Rogerson 2017). There is auxiliary evidence of declining geographical mobility of workers (Wozniak et al. 2018), which could suggest labor misallocation or skills mismatch. In particular, housing costs and zoning restrictions have been barriers to labor market reallocation (Hsieh and Moretti 2009). But whether "skills mismatch" or "labor misallocation" is an important problem remains difficult to know.

The post-COVID labor market may turn all these factors driving mismatch upside down. The forced increase in telecommuting may induce a radical spatial reallocation of both employers and workers, and geographic-level mismatches may become minor for those occupations where remote work is feasible. But this might be good only for employers: A recent news story reports that major tech companies are cutting pay for remote tech workers who left the Bay Area for cheaper areas (Bindley and Brown 2020).

## Basic Skills Gap

The evidence also does not bear out claims of a basic skills gap, at least not one that has grown significantly in the last half-century. There is little evidence of a change in US relative education quality since the 1960s, when the first international tests were administered. Over the last six decades, the US's middling performance has been constant. Over these decades, the US has never been a leader in Programme for International Student Assessment—style math and reading



scores, despite the US labor market having moments of fast and slow wage growth and high and low tightness during these years. In other words, the mediocre performance of the US in international educational testing is worrying, but it has been a fixture over 50 years of fluctuations in labor market tightness.

The causes of middling US school performance are many, and beyond the scope of this survey. As Richard Rothstein puts it, the relentless policy focus on schools to undo background inequality in family situations asks too much of schools. The local funding structure, extreme racial segregation, and low teacher pay all likely contribute to poor school performance, but there is likely room for a large number of “intangibles” to contribute to schooling outcomes. Further, as discussed above, the lopsided distribution of employer power may contribute something to the basic skills gap: Faced with wages below marginal product, it is rational for workers to underinvest in skills. Indeed, the slowdown in skill attainment in the US and UK (Katz and Autor 1998) coincided with the early 1980s hemorrhaging of worker power; other countries that did not experience the same level of deunionization did not experience the same slowdown in skill attainment, although more research untangling the relationship between educational attainment and labor market institutions is needed.

An important corrective to the narrative about the need to close the educational gap is provided in Fredrik De Boer’s book *The Cult of Smart*, in which he points out that once we admit that academic ability is unequally distributed and quite highly correlated with parental income, perhaps we ought to look not to equalize academic outcomes, but instead deliver high-quality jobs to people regardless of academic ability. Indeed, Landersø and Heckman (2016), as discussed above, observe that Denmark achieves high intergenerational mobility despite inequality in educational outcomes because it equalizes labor market outcomes. Rather than using schools to reformat people to fit the economy, policymakers could reformat the economy to benefit people regardless of how well they do at school. We can and should invest much more in providing basic education to low-income children, but this is also because education is a social benefit, not solely because it guarantees a job.

***We ought to look not to equalize academic outcomes, but instead deliver high-quality jobs to people regardless of academic ability.***



## DOES TRAINING DELIVER?

If a skills gap is the diagnosis for what is causing inequality and unemployment, then training would seem to be the prescription. But as the theories and analysis laid out above suggest, there's reason to question whether skills gaps are an accurate diagnosis. So far, we have described evidence that suggests alternatives to this diagnosis. Here, we look at it from the other angle and ask how its prescription of more skills training is working.

Numerous government programs offer and fund skills training. The US government subsidizes student loans and offers tuition grants, while state and local governments provide subsidized schooling, vocational training, and university training. Many programs help workers who have lost jobs train for and find new positions. For example, the US Department of Labor's Employment and Training Administration offers retraining programs to dislocated workers and others. The Workforce and Innovation Opportunity Act, passed in 2014, provided some additional resources for supporting and retraining people who have lost their jobs (DOL n.d.). State and local governments also offer services to unemployed workers, including training and matching (City of Chicago n.d.). On the private-sector side, many firms offer training for their own employees (Lerman et al. 2018) (Green, Manchin, and Wilkinson 1999).<sup>25</sup> In some unionized sectors, management and labor jointly fund and govern apprenticeship and training programs, which show high returns (Hollenbeck and Huang 2002; Reed et al. 2012).

Job training programs are among the most studied interventions in labor markets (Heckman LaLonde and Topel 1999; McCall, Smith, and Wunsch 2016; Rothstein and von Wachter 2016; Autor, Li, and Notowidigdo 2019), with an almost 50-year history. Now-standard methodologies for experimental evaluation were first pioneered in studies of job training, and the pitfalls of nonexperimental methodologies were illustrated by Robert LaLonde's now-classic 1986 paper on job training demonstrating that nonexperimental evaluations may contain large and unknown biases. Surveys of training programs also abound, and we will not attempt to be comprehensive here.

Most studies of job training programs focus on government-backed programs. When it comes to private-sector programs, there is little formal, experimental program evaluation and instead a preponderance of descriptive work. A 1995

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<sup>25</sup> In the UK, a number of studies have found that unionized employers provide higher levels of training. Notably, larger and/or unionized employers offer both more informal and formal training (Lerman et al. 2018; Green, Manchin, and Wilkinson 1999; Dustmann and Schonberg 2009).

*Journal of Economic Perspectives* survey by Weiss “attempted to measure the effects of on-the-job training on productivity.” “It is fair to say that the evidence is inconclusive.” Subsequent work has not added much to this conclusion. A 2016 survey by McCall, Smith, and Wunsch ended by saying “more knowledge is needed about the effects of firm-provided training or more generally subsidized training for employed workers.”

Although there is only a limited pool of controlled experiments regarding the efficacy of job training programs, existing studies suggest a tremendous variety in training programs and emphasize the importance of crafting programs to target specific sectors. While experimental evaluations of training programs run by the federal government (e.g., Workforce Investment Act Gold Standard, Jobs Training Partnership Act, and Job Corps) have been mostly disappointing (Schochet 2020),<sup>26</sup> there have been recent successes with what are best labeled “sectoral employment programs.” These programs have a training component but are much more comprehensive. They extensively prescreen candidates for motivation and ability, ensure the training provided is valued and recognized by employers, and include a ready referral system to match participants with employers, alongside coaching for job retention.

The superior performance of sectoral employment programs may come from the facilitated job search, employer matching, and retention coaching offered by the successful programs. We discuss evidence on this below.

The contribution of wraparound services should not be considered training to increase participants’ “human capital,” even in the expanded sense of noncognitive skills (Schochet 2020), at least by an economic interpretation of the term. The wraparound services are real interventions in labor markets that do not necessarily increase a worker’s contribution to an employer’s output. The mechanisms by which these services raise wages are not primarily because they make a worker generate more output at a given employer for a given wage.<sup>27</sup>

Four reasonably high-quality (e.g., randomized control trials) examples of studies that show success at specific sectoral programs are WorkAdvance (with Per Scholas and JVS as the successful implementation sites of the four tested), Project QUEST, Year Up, and the Wisconsin Regional Training Partnership. The first three are

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<sup>26</sup> Schochet (2020) shows positive effects for 20- to 24-year-olds, but effects pooling all participants are uniformly null.

<sup>27</sup> The wraparound services may also prove difficult to scale. Consider the importance of coaching, mental health services, and counseling, which many programs bundle with the training. To provide one hour a week of counseling, a full-time counselor is needed for every 30 workers enrolled. To deliver this kind of intervention to millions of workers would require a massive corps of employment counselors that currently does not exist.



particularly important to cover because they have recent, long-term randomized evaluations that show positive effects over many years.

### **WorkAdvance: Per Scholas and JVS Boston<sup>28</sup>**

WorkAdvance is an umbrella for a number of skills training programs that share an approach, have been studied together, and share some funding streams. Each of the programs takes a dual customer approach and thus works to meet the needs of both workers and employers. A randomized control trial (RCT) of four WorkAdvance sites across multiple sectors found the programs had no employment effects—this despite all sites raising credential acquisition rates by over 30 percentage points. Only one site, which focused on technology (Per Scholas), had significant earnings effects compared to the control group: almost 20 percent higher, and notably still apparent four to eight years after individuals entered the study.

Per Scholas is a large, Bronx-based nonprofit set up to provide IT skills training to underrepresented groups. It began as a computer-refurbishing training and service provider, and once maintained its own computer recycling center that employed its own graduates. That recycling program has shut down, and the program training has been broadened to a variety of jobs in the technology industry (current jobs listed include AWS/cloud and data engineers). Unique among training programs, Per Scholas has been evaluated twice, both times with RCTs, and with quite similar impacts of 20–30 percent earnings gains two years out, and similar magnitudes of employment effects.

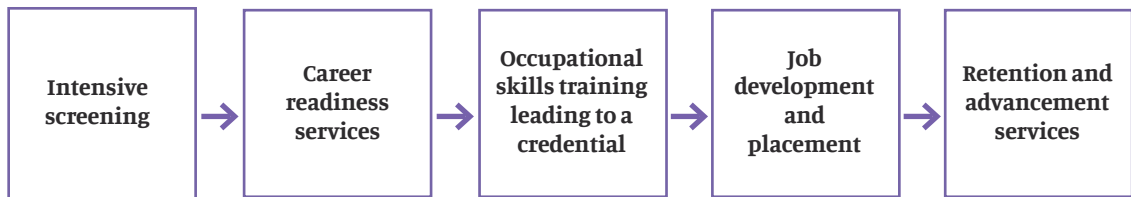
The results of the two RCTs are promising, but also leave open a number of questions about what makes the program successful. Notably, the skills content of the program changed substantially between the two evaluations as a result of changing market conditions: The first study took place while the program trained participants specifically in computer refurbishment; the second when Per Scholas had broadened to train applicants for a larger variety of jobs. Both iterations of the program contained significant wraparound services such as “post-employment retention and career advancement services including coaching, identifying next-step job opportunities, and assistance with rapid reemployment if workers lose their jobs.” Both iterations of the program also “carefully screened” applicants, which raises questions about their ability to scale.

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<sup>28</sup> A previous iteration of Per Scholas, along with WRTP and JVS Boston, was evaluated in Maguire (2010).

A follow-up study should disaggregate the program's different components, which are common to all WorkAdvance model programs, in order to determine which are essential for success. Indeed, we observe that, given that the program itself had to change the skills content quite quickly as market conditions changed, the depreciation of the IT skills taught in this program may be quite high. Longer-term results may tell us if other components of the program help keep earnings high even in the face of depreciating skills.

**FIGURE 4: WORKADVANCE MODEL COMPONENTS**



Source: *Towards Employment*, "[The WorkAdvance Model](#)," Accessed November 17, 2020.

Another program covered by Maguire et al. (2010) in the study of sectoral programs is JVS Boston, which places enrollees in clerical and medical jobs. Employers serve on advisory committees, and staff develop extensive relationships with employers in order to figure out staffing needs. The training is 20 to 22 weeks and ends with certificates. JVS Boston also accompanies training with extensive wraparound services, including childcare and transportation assistance, retention counseling, tutoring, and tax preparation assistance. Maguire et al. (2010) document a 20 percent earnings increase two years after completion. Interestingly, JVS pitches itself as an institution providing “voice” for worker preferences regarding job quality, but it is unclear whether worker-participants themselves have an institutional role in its governance, as employers (and the usual set of philanthropic connections to wealth) do.<sup>29</sup>

<sup>29</sup> For example, none of their board or leadership advertise themselves as graduates of the program.

## Year Up

Year Up is a yearlong training program that connects disadvantaged youth with high school diplomas and corporate employment by providing them with skills and leadership development training (first six months) and on-the-job training with a corporate internship (second six months). Students are also given the opportunity to earn a certification through college partnerships. The program provides students with weekly stipends and intensive supportive services, as well as job search and placement assistance. The weekly stipends are attached to a “points system” to incentivize compliance with the program, with deductions made for infractions like improper computer use.

The RCT evaluation of Year Up found that after the one-year program, employment rates were no different between the control and treatment groups, but hourly wages were significantly different. Year Up grads who got jobs in finance or tech drove these results, suggesting that the wage increases were driven by the particular sectors in which corporate internships took place. The corporate internships may have allowed workers to get referrals that allowed them to continue to work in those (high-wage) industries, so it would be interesting to see if those who interned in finance/tech jobs had an advantage in staying in those sectors (consistent with cross-industry mobility barriers).

One notable feature of the Year Up evaluation is that a substantial fraction of the control group participated in the program despite not being randomized into it (they were not blocked from enrolling) and had earnings even higher than the treated group. In the parlance of instrumental variables, this is evidence that there is considerable heterogeneity in treatment effects, as there was a set of people with high potential returns from the program, and so they enrolled even when experimentally assigned to the control group. Further, people who were randomized into Year Up but did not finish had higher cumulative post-program earnings than those who did finish, suggesting that there is some selection into program completion based on returns. All this evidence suggests that at least Year Up and, likely, sectoral employment programs in general have heterogeneous returns: Different people benefit differently from them.

## The Role of Community Organizations: Project QUEST

Project QUEST is another promising workforce development program. Based in the San Antonio health-care sector, Project QUEST serves a population of mostly Latinx women. An RCT of Project QUEST showed large effects up to nine years out, with an average \$9,000 increase in earnings (20 percent over the control group) and larger effects for older workers.

An important feature of Project QUEST is that it is run by South West Industrial Areas Foundation (IAF), a community organization (similar to ACORN) that works with low-income workers. IAF has long-standing community-organizing roots in the San Antonio Valley. Importantly, IAF is an advocate for higher job quality standards and living wages for municipal and school workers throughout the San Antonio Valley. For example, they won a wage increase from \$10 to \$15 in the San Antonio independent school district. Note that this is a 50 percent wage increase, even larger than that of Project QUEST. Osterman (2006, 632) writes:

*The IAF also has some of the characteristics of a union. Although there are some differences (e.g., unions elect the top leadership, and they endorse political candidates), the structural similarities with the IAF are strong. Both unions and the IAF have a paid professional staff (business agents and organizers). They also have a non-professional membership cadre in leadership positions (shop stewards and primary members). In both cases, their power ultimately derives from their ability to mobilize large numbers of less-committed members (e.g., by going on strike or undertaking a job action or political canvassing, in the case of unions, and by attending assemblies and doing political canvassing, in the case of the IAF).*

Project QUEST offers long-term navigation and training services, through college-based studies focused on nondegree certificate programs, as well as associate's degrees in the health-care industry, primarily for nursing. Similar to the WorkAdvance programs, Project QUEST includes significant prescreening. It also includes substantial wraparound services: Financial aid is provided to cover all educational expenses, including occupational licensing exams, uniforms, and additional tutoring. Project QUEST also provides participants with weekly counseling, referrals to other safety net programs, job placement assistance, and employer referrals.



While the 20–30 percent earnings and employment effect shown by the Project QUEST RCT is quite promising, as with Per Scholas, it is impossible to disaggregate the skill augmentation components of the program from its wraparound services. Interestingly, in survey data at the six-year mark, the control group in the Project QUEST RCT was more likely to obtain a college degree than the treatment group, even though the treatment group was more likely to complete a targeted health-care certification. The nine-year evaluation of Project QUEST looked at National Student Clearinghouse administrative data on educational attainment and found higher completion rates for treated participants, but this only covers a subset of the institutions the control group would be likely to attend. Future work should try to combine survey and administrative data to obtain a complete picture.

Further, the groups that increase educational attainment are not always the groups that experience earnings increases. For example, the effects of Project QUEST on older workers' credential attainment are insignificant, but the effects on earnings are significant only in those same older worker samples. Similarly, the effects on male credentials are weakly negative, but the effects on male earnings remain positive, if insignificant. Likewise, the workers' credential effects and wage effects showed up in different subgroups with respect to their number of children: Participants with children reported larger credential increases than those without, but smaller earnings gains. Participants who had never married experienced the largest earnings gains, but were no more likely than other participants to experience additional educational attainment.

These facts suggest that it was other components of the program—for example, the screening, the targeted provision of credentials, or the wraparound services—rather than the educational provision per se that generated the increase in earnings and employment. Alternatively, given the narrow industry and occupation focus, it is possible the treatment group could have been crowding out the control group in finding and keeping health-care jobs.

Notably, three major San Antonio hospitals recently settled a class action suit (filed in 2006 but denied class status in 2019) on wage-fixing for nurses (the primary Project QUEST occupation). Indeed, the *New York Times* wrote positive accounts of Project QUEST graduates employed at a hospital that was simultaneously accused of collusion (Schwartz 2019; Garcia 2020).<sup>30</sup>

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<sup>30</sup> e.g., Project QUEST graduates were employed by Metropolitan Methodist Hospital as documented by Schwartz (2019), and MMH was named in the suit (Garcia 2020).



Evidence suggests that nurses are among the occupations most vulnerable to monopsony, on the basis of specialized skills and gender (Staiger, Spetz, and Phibbs 2010 present compelling evidence from VA hospital raises). Note that these hospitals are still “high-wage employers,” even if they are colluding to keep wages lower than they otherwise would be, so the presence of collusion is consistent with high returns to the training program. But collusion also suggests that these employers rationed jobs in order to keep wages low, heightening concern that negative spillovers onto the control group drove the treatment effect, and perhaps explaining why the control group may have acquired more “general” college education.<sup>31</sup> IAF is presumably aware of these concerns about employer collusion, but may not have sufficient legal and political power to enforce wage mandates vis-à-vis the employers of QUEST graduates, whereas a union might have had more.

### **The Role of Unions: Wisconsin Regional Training Partnership**

The Wisconsin Regional Training Partnership (WRTP) is a membership organization and sectoral training program. Its members include businesses, organized labor, and workers. Together, members identify industry needs and, based on those needs, WRTP offers preemployment training, incumbent worker training, and technical assistance to businesses. It works primarily in the manufacturing, construction, health, and commercial driving industries. The WRTP is notable among programs discussed here for its formalized incorporation of worker representatives in program design and administration. Like the other studied sectoral programs, WRTP provides extensive wraparound services, including childcare, transportation, job placement, and postemployment retention coaching.

In “Taking the High Road in Milwaukee,” Bernhardt, Dresser, and Rogers (2002) discuss the formation of WRTP as an explicit strategy of workforce development to push the local manufacturing sector into a “high-road” equilibrium. They further stress the role of unions as providing crucial and productive worker voice and making WRTP an especially effective workforce intermediary: “Equally important, effective training also requires good

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<sup>31</sup> Maguire et al. (2010) argue against displacement effects by showing that earnings effects are not driven by hours differences, but instead wage differences. But the crowding out could be happening on the “good jobs” margin rather than the hours margin. Suppose fixed numbers of good jobs and bad jobs, and suppose treated individuals are more likely to get high-wage jobs, ensuring that the control group becomes more likely to get the low-wage jobs. This would be rationing without any hours or employment differences.

information from shop floor workers. They have the most intimate knowledge of the content of work, wasted steps, and process problems. Unions provide independent workforce representation and so can contribute to making workforce training and modernization efforts more effective” (126).

The results from the Maguire et al. (2010) evaluation of WRTP are as promising as their findings for the other programs discussed here, but no longer-term evaluation has been conducted. WRTP participants are 12 percent more likely to work union jobs and experience an average earnings increase of \$6,355. The earnings increase is largest for Black and formerly incarcerated participants (driven by employment increases). WRTP shows small negative effects in the (declining) Wisconsin manufacturing sector. Arguably, this is why the effects the study finds for men are so small, offsetting larger gains in construction.

Notably, WRTP’s high returns come from a program that has among the lowest training “exposure.” WRTP trainings last between two and eight weeks compared to 20–22 weeks for JVS-Boston and 15 weeks for Per Scholas. Further, WRTP had the highest share of Black participants out of all the programs studied by Maguire et al. (2010) and delivered particularly high returns for that population.

The success of WRTP is distinctive because it has extensive involvement both of employers and of unions and other community organizations. This seems to affect the training itself, which is much less paternalistic (and less involved) than other programs. For example, there is no equivalent of the Year Up “contract” with stipend deductions. Further, we posit that the presence of unions in the governance structure of the program ensures that it isn’t “captured” and used purely to deliver a trained workforce to a narrow set of employers. Instead, WRTP diffuses information about best practices and standards across all employers in a sector and institutionalizes concerns about pay, job quality, and employment security. Given the long duration of this program and the increases in union jobs, it would be interesting to know to what extent participants in the program have returned to give feedback.

While these sectoral employment programs have shown persistent successes in randomized evaluations, questions remain about the extent to which the effects are attributable to the skills imparted by the training per se versus the other components (prescreening, credentialing existing skills, wraparound services and support during training, job search assistance, and retention coaching). To what extent would effects persist if programs enhanced worker skills without complementary investments to enhance worker employment success and



mobility? To what extent would effects persist if programs provided childcare, job search assistance, and skill certification, but without complementary investments in enhancing worker skills (Forston et al. 2017)?<sup>32</sup> Conversations with evaluators at MRDC, as well as the evaluation reports, suggest that the skills imparted by the programs were, at best, only part of their success.<sup>33</sup>

These successful sectoral employment programs contrast with more traditional training programs, many of which are funded and administered by the federal government. Using very large samples over long periods, evaluations of these programs show that they have been much less successful in raising long-term earnings than the sectoral programs discussed above. These studies have found narrower training programs to have other positive effects, but it is unclear how to weigh successes outside the core mission of the program. For example:

- **Job Corps:** Every year, the Department of Labor's Job Corps program trains 50,000 young adults between ages 16 and 24—largely high-school dropouts—for in-demand skills at 123 centers nationwide. Begun in 1964, Job Corps is the largest program run by DOL and has graduated roughly 2 million students since its inception. Results from a randomized evaluation of Job Corps conducted by Mathematica are decidedly mixed. While Job Corps trainees do have higher earnings (12 percent effect) after training than a control group, the effects are short-lived, with no detectable effects for the majority of trainees after four years (Schochet et al. 2008). Some of the erosion in effect sizes may be due to differential attrition (Lee 2012), but analysis of administrative data not subject to the same attrition concerns reveals little long-run effect on other outcomes. A more recent report (Schochet 2020) using IRS administrative data found significant, long-run positive effects of Job Corps for the 20- to 24-year-old age group 20 years after enrolling in the program in 1995 and 1996, with earnings increasing by 7.3 percent for compliers; it still concludes, however, that the overall program effect is small and quickly faded for younger students. Job Corps had stronger effects on rates of arrest and incarceration, reducing arrest rates by 4 percent in one experiment. But this raises a question of whether Job Corps's purpose is keeping at-risk youth out of prison or training a supply of needed labor and raising workers' earnings. It seems to succeed at the former but not the latter. This is certainly a legitimate policy goal but doesn't suggest that the goal of increasing labor market earnings for young workers has been met.<sup>34</sup>

<sup>32</sup> This is consistent with the 30-month WIA evaluation finding significant earnings gains from the counseling/coaching/"intensive services" aspect, but not from the training aspect.

<sup>33</sup> Another question: To what extent does the prescreening limit the external validity or scalability of the training evaluations?

<sup>34</sup> Indeed, as King and Heinrich (2011) point out, some of the pre-school intervention evaluations depend almost entirely on criminal justice savings to generate a positive cost-benefit.





- Workforce Investment Act and Adult and Dislocated Worker Training Program:** The Department of Labor-administered Workforce Investment Act and Adult and Dislocated Worker Training Program together serve 7 million job seekers at an annual cost of about \$1.8 billion (Fortson et al. 2017). Initial experimental evaluations of the training programs concluded that they had little effect on earnings or employment 30 months later, while intensive services (which also provided job search assistance and case management) did increase earnings (Fortson et al. 2018). Recent work by Mathematica with Manoli and Patel linked experimental records to IRS administrative data on longer-run employment and earnings. This enables comparison with other experimental programs (in this case, Job Corps and Nevada’s Job Search Assistance) over the same time horizon and in the same data. Results remain disappointingly small for training programs alone, with no significant impact on earnings in survey or administrative data.
- US Navy Voluntary Education Program:** The navy offers off-duty educational opportunities to all active-duty personnel seeking to enhance their professional growth. A 2002 study led by Federico Garcia estimated that participation in the program increased the probability of sailors remaining in the navy through the end of their contracts by 13 percentage points. The study estimated retention benefits of the program to be \$62 million in the study year, significantly exceeding the \$57.8 million costs of the program for the same year. It would be interesting to know if these retention benefits exist for other employer-provided training programs. Workers may be more willing to invest in training programs when they see a secure, well-paying career down the road, not just a job. Notably, the US armed forces are a monopsony par excellence, and the educational benefits offered are general skills, so the fact that general skill investments increased retention is evidence that employer-provided general training could increase retention rates without raising wages—for example, by instilling loyalty. This is some evidence that employers may supply training because it economizes on wage-costs of retention, rather than improving worker skills or productivity.

*Programs narrowly targeted at imparting skills do not offer the returns we would look for if the skills gap were a major cause of low wages, unemployment, and inequality.*



The discussion above suggests that programs narrowly targeted at imparting skills do not offer the returns we would look for if the skills gap were a major cause of low wages, unemployment, and inequality. Furthermore, these different studies raise concerns about how employers might capture the bulk of returns from employer-provided training, suggesting that productivity effects of training may be larger than earnings effects.

Unfortunately, to date, little of the US literature has estimated the effects of training on productivity. However, outside the US, some training programs have assessed productivity increases, generally finding that they are larger than wage increases. In Belgian firm-level data, Konings and Vanormelingen (2015) report a 23 percent increase in productivity due to training, yet only a 10 percent increase in wages. In an RCT in India, Adhvaryu et al. (2018) find an 11 percentage point increase in productivity due to training, yet no effect on wages. Both of these results suggest that employers are appropriating the bulk of the gains from training (McIntosh & Zeitlin 2020).<sup>35</sup>

In addition to the RCTs discussed above, the literature on workforce training programs includes an important meta-analysis by David Card, Jochen Kluge, and Andrea Weber (2017) of active labor market policies—including a wide range of training programs, job search support, and subsidized employment. They find substantial long-term effects of training programs (and private employment), comparable to the difference between high school and community college. They conclude:

*Active labor market policies have relatively small average effects in the short run and larger effects in the medium and longer run. Time profile of impacts varies across active labor market policies. While job search assistance programs have similar impact in both the short and long run, training and private sector employment programs have larger impacts in the long run. Average impact also varies across participant groups, with larger impact for females and participants drawn from the pool of long term unemployed.*

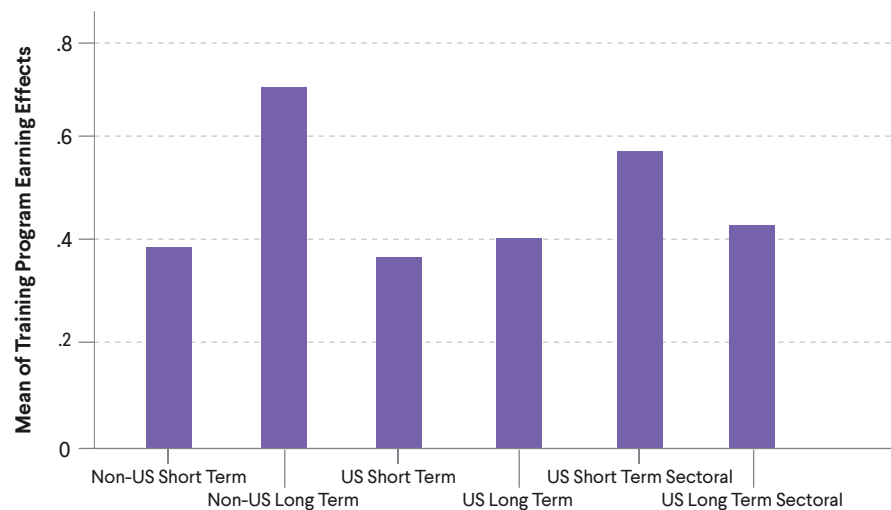
Replicating and extending Card, Kluge, and Weber's findings, we show in Figure 5 below that the positive long-term returns to training programs are not there in standard US training programs, especially when long-term effects are considered. In our data, the recent sectoral employment programs discussed above (Year

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<sup>35</sup> Another important recent experimental result (McIntosh and Zeitlin 2020) from a developing country finds that unconditional cash grants have even larger effects per dollar on income and subjective well-being (as well as hours of work and earnings) than a USAID workforce development program. Evaluations of this type should be conducted in the US: To the extent that workforce development is an anti-poverty device, direct transfers of cash may dominate training in both cost and efficacy.

Up; Project QUEST; and WorkAdvance, including Per Scholas), as well as those evaluated in Maguire et al. (2010) (Per Scholas, WRTP, and JVS-Boston), are coded according to the fields in Card, Kluve, and Weber (2017). While the short-term effects (most of which are from Maguire et al. 2010) have been quite promising, the long-term effects are somewhat smaller (due to fade-out in the non—Per Scholas WorkAdvance programs), although quite large in comparison to the previous training program evaluations.

**FIGURE 5: TRAINING PROGRAM EARNING EFFECTS**



*Note: Training program earnings results from Clard, Kluve and Weber (2017) compared with short and long-term results from 7 sectoral employment program RCT evaluations (last 2 bars). Includes 62 estimates from Maguire et al. (2010), WorkAdvance (Schaberg and Greenberg 2018, with each of the 4 WorkAdvance sites treated as a separate program), Project QUEST (Roder and Elliott 2019), and Year-Up (Fein and Hamadyk 2018), coded along the dimensions in Card, Kluve and Weber.*

## FOR WHOM DOES TRAINING DELIVER?

In addition to looking at general earnings and employment effects, studies have broken down how training programs affect different demographics. While there is much work to be done in this area—studies about variation in training effects on the basis of race and gender leave many questions unexplored—one thing is clear: Training effects are larger in labor markets where workers have more institutionalized power. Further, across their sample, Card and co-authors found that among active labor market interventions, the direct provision of a job works

better for women and young workers, while training works better for long-term unemployed (Card, Kluge, and Weber 2017).

The heterogeneous effects of programs by gender are quite consistent with the reality of women facing more employer market power. Being relatively less mobile due to gender norms of caregiving and marriage might mean that programs that directly incorporate job provision (and childcare) would have larger effects for women than training without job placement at the end. Nevertheless, more research is needed to fully understand how gender dynamics intersect with market power and training programs.

Similarly, understanding the heterogeneity of training program outcomes by race and ethnicity requires more research. Many of the sectoral employment programs show high returns to Black and brown people. Maguire et al. (2010) concludes, “At WRTP, African Americans, women and formerly incarcerated participants experienced significant earnings gains. At JVS—Boston, the program showed impacts for young adults, African Americans, women and those who had been on welfare. At Per Scholas, immigrants, men, Latinos, formerly incarcerated individuals and young adults (18–26) had significant earnings gains.” However, one challenge with existing studies is that very few successful sectoral employment programs have extensive participation by both white people and people of color in the same program (e.g., Per Scholas RCT 1 is mostly Black, and Project QUEST is mostly Latinx). This makes it difficult to understand the mechanisms behind heterogeneous effects given racial discrimination of some employers, affirmative action programs in others, and disparate job-finding networks by worker race and ethnicity.

In general, there is limited participation of native-born white people in these programs, so investigating the extent to which these programs are acting on race-specific mechanisms of discrimination and structural racism is difficult to unpack. While every program evaluates race-specific interactions of the program assignment, it is difficult to know what to make of them, given the wide variety of labor market disadvantages faced by Black and Latinx workers. Little of the evaluations focus on whether training reduces discrimination or increases skill, for example. A large-scale evaluation with diverse participants facing similar labor markets and randomly assigned combinations of training, search assistance, and other complementary program elements could improve understanding of mechanism-generating differences in effects by race, ethnicity, and gender.<sup>36</sup>

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<sup>36</sup> The large-scale Job Corps and WIA studies have enough racial heterogeneity and power that investigating whether they reduced discrimination (e.g., increased interview rates) or just increased skills may be feasible.



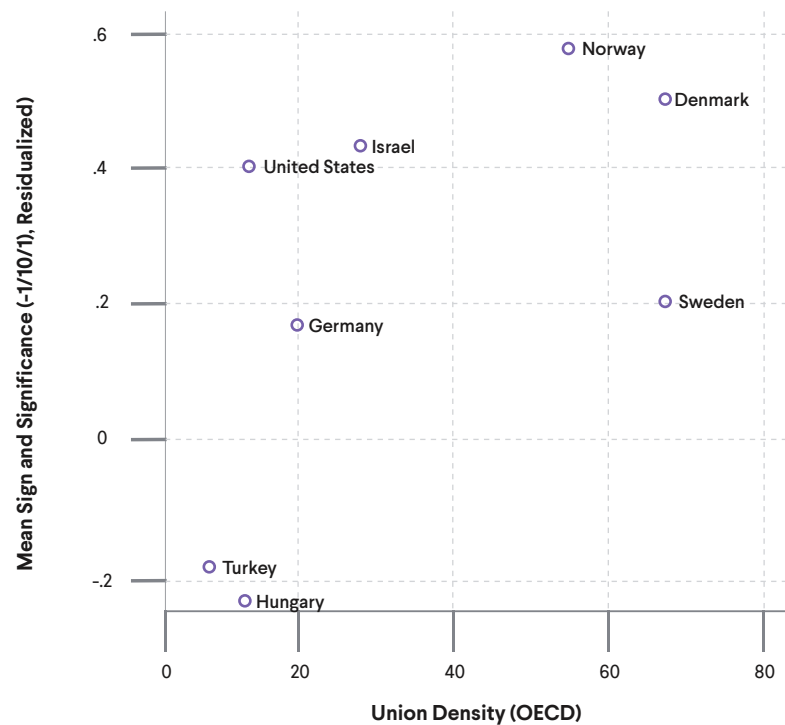
Evaluation of training programs could aim at testing for specific mechanisms of impacting racial disparity. For example, do wraparound services work by ameliorating disadvantage due to residential segregation and prohibitive commute times? Does credentialing raise the wages of Black and brown workers because it overcomes biased perceptions in employers, recruiters, and managers? Do these have positive spillovers on other disadvantaged Black and brown workers who do not undergo the training? Do some programs work by getting participants to “act white” in ways that might fail and generate backlash when scaled? Hurst et al. (2020) show that race- and gender-specific barriers to both skill acquisition and employment are a major source of misallocation, and their reduction since 1960 accounts for a nontrivial share of American productivity growth.

Disparate program effects by region are even more difficult to unpack. Regions differ in many ways, including industrial and occupational employment mix. Indeed, specializing workers in the skills required by employers in their local labor market may raise their wages while allowing them to stay in their communities and care networks; however, this might also enhance local employers’ monopsony power. One simple exercise to determine if this is happening would be to look at the heterogeneity in outcomes in the big training programs like Job Corps and the WIA Adult and Dislocated Worker Program by labor market concentration or other measures of market power. In addition, regional training programs may lead workers to forgo potentially more portable skills that would allow them greater access to sectors with high wages in other communities. These are difficult trade-offs, and little specific evidence about the magnitudes of these trade-offs exists in the literature.

While regional comparisons are difficult in the US, we can compare across countries with diverse labor market institutions. Combining data from the Card, Kluve, and Weber (2017) meta-analysis with data on union density across OECD countries, we assessed the return to training programs by national union density. However, countries also differ in the kinds of studies conducted—for example, on the sample size and duration of study. We can control for these study characteristics (along with age and gender) and study a binned scatterplot of residuals, illustrating how average training-program effects differ with union density, after controlling for other characteristics. Figure 6 shows average training-program effects across OECD countries; countries are grouped from those with the lowest to those with the highest share of workers belonging to unions. Countries with higher union density have somewhat higher returns to training programs. While far from definitive, this comparative relationship suggests a more “ecological” relationship between labor market institutions and workforce development.



FIGURE 6: VARIATION IN TRAINING PROGRAM EARNING EFFECTS BY NATIONAL UNION DENSITY



Note: Country-level scatterplot,  $N=53$  training program estimates. The training programs' effects on earnings (on a  $-1/0/1$  scale) are estimated conditional on short- and medium-term controls, square root of sample size, age, and gender using data from Card, Kluve, and Weber (2017) (these do not include the estimates from recent sectoral employment programs). The residualized program effects are then averaged at the country level and plotted against country-level union density. Results are similar if coverage, rather than density, is used instead.

Interestingly, and consistent with the hypothesis that unions counterbalance employer market power, we see weak evidence that the returns to job search assistance are lower in more unionized labor markets.<sup>37</sup> Continental European labor markets, where wages are often set within collective sectoral bargaining agreements rather than solely under employer-specific bargains, tend to have lower wage dispersion. This suggests that job search assistance (i.e., reducing frictions) may have higher returns in the US's more employer-dominated labor markets.

Other studies confirm that, where union membership is higher, workers have more say in their firms' employment practices, and wages are less likely to be suppressed by employer market power. The micro-evidence is mixed and

<sup>37</sup> This is consistent with the view of Teulings and Hartog (1998), who argue that more centralized collective bargaining systems result in lower wage dispersion.

somewhat dated. Barron, Fuess, and Loewenstein (1987), based on the Employment Opportunity Pilot Project (EOPP), find negative effects of union status on training, while Barron, Berger, and Black (1997), on the other hand, find no such evidence using the same data and find positive effects in the Small Business Administration survey, as does Lynch (1992).

In the US, the proximate mechanisms for worker voice backed by the legal capacity to set wages are still largely labor unions; despite only counting 6–7 percent of the private workforce nationally as members, they represent the interests of a much larger group of workers in many regional initiatives. Community organizations like IAF and Make the Road can also be important, but don't have the same legal and political leverage to stand toe-to-toe with employers, nor as large a share of financing from members. While there is not enough evidence on training programs built with worker input (WRTP and Project QUEST aside), we can learn about the heterogeneity in training program success by contrasting their effects in different contexts. A future study might compare training programs' effects in more and less unionized regions of the country.

## Conclusion

### LIMITS OF TRAINING PROGRAMS

If job training programs offer only limited returns under specific conditions, this casts doubt on the skills gap as the underlying driver of inequality. If labor market institutions contribute to weaker earning opportunities and rising income inequality, this should inform design of training programs as well.

Monopsony emphasizes the interaction of two frictions: employers' power over wages and working conditions—including the content of employer-provided training—and workers' lack of immediate substitutes in the labor market. Sectoral employment programs could be designed with these two targets in mind. Many of the wraparound services provided in the successful programs can be thought of as increasing and improving job offers available to workers, including by managing the shocks that make a given job difficult to hold on to (e.g., childcare provision or transportation).

Retraining programs can enable workers to earn a higher income after the program not just by increasing their productivity within their current workplace



or occupation but by broadening the set of employers for whom they could work if desired or if fired. Hyman (2018) provides quasi-experimental evidence that Trade Adjustment Assistance (TAA) helps workers transition into new jobs, and TAA beneficiaries experience higher incomes and employment (but the effect fully disappears after a decade). This general-skill pathway for training to counter employer market power works by reducing search frictions for workers rather than by increasing in-occupation productivity, reducing market concentration, or directly regulating the terms of employment. This improved outside option should increase worker bargaining power vis-à-vis any employer, who in turn must refrain from reducing wages as far below marginal product as they otherwise would.

Indeed, much of the value of sectoral employment programs may come from the facilitated job search, employer matching, and retention coaching offered by the successful programs. Consistent with the idea that matching and job search pay off as much as skill development, consider high-quality evidence from replications of three evaluations: Manoli and Patel (2019) compare linked administrative IRS data across three experimental evaluations: the WIA Gold Standard evaluation and National Job Corps Evaluation Study, both described above, and an experimental Job Search Assistance program implemented in Nevada (REA). They find that while job search assistance provided by WIA and Nevada REA had large and persistent positive effects on employment and earnings, the WIA and Job Corps skills training programs did not (CEA 2016).<sup>38</sup>

## COMPARING TRAINING PROGRAMS WITH UNIONS

One informative comparison is between the effects of sectoral employment programs and unionization. The experimental returns to training programs are in the same range as the union premium for lower-earning workers (say in the 5–15 percent range, to be generous, but both have estimates that can be as high as 30 percent). But the directions of the spillovers are very different: While the direction of training program spillovers onto the untrained is potentially negative, particularly if jobs are rationed, the spillovers from unionization onto nonunion workers are generally positive (Rosenfeld and Western 2004; Fortin, Lemieux, and Lloyd 2019; Farber et al. 2020). Farber et al. 2020 show that, historically, high union density corresponds to disproportionately Black and brown and less-educated

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<sup>38</sup> Other papers have found evidence of returns to job search assistance, largely via lower unemployment duration rather than higher wages (Jacobson and Petta 2000; Klepinger, Johnson, and Joesch 2002).



households being in unions, and these groups get higher union premia than white people and educated workers. Further, the union effect is less likely to be contaminated by cream-skimming (although not immune: Card 1996 finds that union members at the bottom are positively selected).

***On the whole, efforts to deliver training programs that pay off to business profit, while raising wages, face an uphill battle vis-à-vis inequality.***

Unions also reduce inequality by redistributing from owners to workers, while a share (say between 15–25 percent, given the residual supply elasticities mentioned above) of the productivity increases from training programs go to employers in the form of monopsony profit. Employers tend to be richer than their workers, although many employers are not rich at all, and many workers are in fact quite rich. However, on the whole, efforts to deliver training programs that pay off to business profit, while raising wages, face an uphill battle vis-à-vis inequality.

If a training program raises hourly wages by 75 cents, it has likely raised productivity by between 80 cents and \$1, and thus has also raised profits per hour worked by 5 to 25 cents, which goes to either suppliers of other inputs (capital, land, intellectual property) or owners themselves. The wealthiest 1 percent of American families own 947 times as much equity in private and public businesses and mutual funds, and pension obligations and the attendant claim on their profit streams, as the average family in the bottom half of wealth (US Federal Reserve 2020). Given how much more concentrated at the top (defined in terms of income or wealth) business income is, training programs are pushing against the wind in terms of their effects on overall income inequality, especially when compared to the effects of unions.

Finally, unions give their members more than just a higher-wage job. They negotiate job security, seniority schedules, and health and safety conditions at work. They also act as an aggregator of worker political voice and political leadership development from workers. Narrowly, when unions are part of a partnership with employers, this may raise the returns to the resulting workforce development programs. More broadly, unionization can reduce income inequality through many channels: collective bargaining over the value produced through employment; shifting income from narrowly concentrated owners of capital to working families; increasing investment in worker skills through apprenticeship,



training, development, and career ladders; and countervailing business's political power in policy fights (Galbraith 1954; Sojourner 2015; Feigenbaum et al. 2019; Hertel-Fernandez 2019).

## **PATHS FORWARD**

When we understand labor markets as containing pervasive market power due to imperfect competition and incomplete contracting, the predictions of the human capital model are enriched and qualified. The “law of one price” does not govern worker wages; bargaining, institutions, social networks, human resource strategies, and practices of compensation and job design can play important roles. These additional forces can account for empirical patterns of inequality and employment, and suggest a rich set of additional policy levers for raising earning opportunities and reducing inequality.

### **Institute Policies to Shift Employers to High-Road Equilibrium**

As discussed above, when employers have outsized power in the labor market, two different kinds of equilibrium in regard to pay, retention, and training are possible. In a low-road equilibrium, firms pay low wages, expect high quit rates, and have little incentive to invest in training. In a high-road equilibrium, firms pay high wages, enjoy low quit rates, and, thus, invest more in training. To shift firms and industries toward the high-road equilibrium, policy interventions could:

- Condition training subsidies on employers giving percentage wage increases over a defined time period for incumbent employees and on increases in starting wage, as well as higher levels over time, for new hires.
- Invest in expanding and improving jointly run labor-management training programs, such as apprenticeship programs in unionized industries and occupations. These programs have many desirable properties. First, labor and management negotiate as relative equals in running the training, designing the compensation, jobs, and career ladders into which participants flow and making it more difficult for employers to claim larger shares of the benefits away from workers. Second, these are often multiemployer programs that help reduce poaching externalities. Third, although many minimum terms and conditions of employment are standardized through negotiations, the



training is recognized and valued by many employers, which facilitates labor mobility and so supports worker bargaining power. Fourth, these partnerships often provide workers and employers easy access to formalized, auditable job-matching systems, such as hiring halls.

- Design training programs to have institutionalized input from worker representatives and incorporate diverse forms of worker representation (e.g., past participants) into program governance.
- Promote institutions and practices that empower workers to make informed choices about potential employers by helping them recognize employers who treat workers well (e.g., fair scheduling practices) and those who treat them badly.
- Promote workers' rights to organize and provide a countervailing source of bargaining power to move monopsonistic employers toward more efficient, higher employment and compensation levels. This can also help ensure that workers capture more of the benefits of training. In particular, seniority and job-security provisions in employment contracts, which mitigate at-will employment, may incentivize both firms and workers to invest in specific skills.
- Increase minimum wages and enforcement of labor market regulation that make low-road practices less profitable and raise the incentives to invest in workers. Much can be done by simply increasing enforcement of already existing policies (e.g., cracking down on wage theft and OSHA violations), and practitioners could innovate in this area.<sup>39</sup> Furthermore, ensure that employers cannot fraudulently misclassify employees as independent contractors to avoid paying unemployment insurance, workers' compensation, overtime premiums, and payroll taxes (Fine 2017).<sup>40</sup>

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<sup>39</sup> Johnson (2020) shows that publicizing OSHA violations, which unions do, leads to increased compliance.

<sup>40</sup> As Janice Fine has written about extensively (Fine 2017), strategies to push employers away from the low-road include increased public spending on enforcement as well as partnerships with worker centers (e.g., Worker Defense Project), consumer-worker coalitions (e.g., Coalition of Immokalee Workers' Fair Food Program), and labor-management partnerships (e.g., Minnesota Fair Contracting Foundation).

## Structure Workforce Development Programs to Actively Counter Employer Market Power

Workforce policy could be designed with the explicit aim of shifting bargaining power in the labor market. The research outlined above suggests that such a shift would have the dual effects of directly addressing some of the persistent inequality that workforce training programs seek to solve, and making the workforce training programs offer more effective at raising wages. Such interventions might include:

***The litmus test should not be not only employers' willingness to contribute resources to finance the program—which could merely reflect their business concerns, such as a desire to manage turnover and worker productivity—but their willingness to compete for trained workers by paying higher wages and benefits.***

- Maximize the probability that training opens many doors for participants. Prefer opportunities and institutions that generate earning opportunities with a wide array of employers over those focusing on a narrower set. Having better outside options will benefit workers whether they choose to move or stay and negotiate better terms. Recognize and accept that this choice may make it harder to get any particular set of employers to contribute resources to these training efforts. The litmus test should be not only employers' willingness to contribute resources to finance the program—which could merely reflect their business concerns, such as a desire to manage turnover and worker productivity—but their willingness to compete for trained workers by paying higher wages and benefits.
- Partner with and build capacity for the Working for America Institute, the AFL-CIO's workforce development vehicle, as well as the large non-AFL-CIO unions (SEIU's "Nurse Alliance," for example, does workforce development for health-care workers, as does Local 1199 and Healthcare Minnesota). Expanding and diversifying apprenticeship and training programs in tandem with unions seems likely to provide the best check on employer market power and result



in programs designed with adequate worker voice, while at the same time expanding the social demographics of the pipeline into those programs.

- Resist the weakening of public oversight of apprenticeship programs, which provide some assurance of pro-mobility and pro-worker features. The current administration and many corporate leaders have pushed to weaken these standards by allowing industry-recognized apprenticeship programs (IRAPs) as an alternative to the conventional union and nonunion registered apprenticeship programs (DOL 2020). By weakening public oversight and allowing industry associations to self-certify, IRAPs are likely to lead to a proliferation of programs that are lower-quality and less portable (Hanks 2018). Companies will have incentives to rebrand their current practices under IRAP and thereby gain access to training subsidies and loopholes in minimum wage laws, with possible harms to workers.
- Pre-apprenticeship programs provide extra recruiting, orientation, and support for inclusion of communities traditionally underrepresented in the occupational workforce, such as women and people of color in the building trades (Conway and Gerber 2007; Martin and Smith 2011; Hanks, McGrew, and Zessoules 2018; US Department of Labor 2020). These are especially common in labor-management joint apprenticeship programs and help connect community members with local jobs from which many have been historically excluded. Consider increased funding and evaluation to improve inclusion.
- Experiment with programs that invest less in skills training and more in job-search assistance and credible skill assessment and certification. Both with and without skills training, experiment with and invest in wraparound services that reduce frictions workers have in finding and maintaining employment while credit-constrained, including resources for transportation, childcare, criminal-record expungement, health, and food security.
- Speculatively, invest in “on-the-job” search programs that encourage and assist workers to look for outside opportunities even while employed. Even if workers do not take an outside offer, they can use the credible threat to raise their compensation with an incumbent employer. Encouraging workers to do more “job shopping” could make the labor market more liquid and improve both wages and efficiency.
- Speculatively, improve transparency of the labor market by improving matching institutions. Standard-setting for the description of jobs, particularly of vacancy postings, might reduce search and matching costs.



Skill requirements and job descriptions should be expressed in ways that make it easier for workers to identify job openings that might be a good fit for them and to compare and contrast them. They might also help workers describe themselves to employers so that alternative employers can more easily seek them out. Federal or state government regulators could issue guidance on content and location of job postings. Increased competition may reduce incentives for employers to upskill job requirements during economic downturns. The institutions that match workers and employers should be accountable to both. If they are employer-dominated, they can become a tool for building employer market power by facilitating employer collusion and wage suppression.

## **Prefer Skills Training Programs That Enable Career Development**

Prefer workforce training programs that provide specific skills paired to high-quality jobs in sectors with career ladders that allow for continued progression. In programs with strong career ladders, the following practices could be instituted:

- Workers should be involved in choosing and designing training programs that develop broad, portable skills. Individual workers being involved in governance is better than not. Institutional representatives of groups of workers who have independent power and democratic accountability structures are better.
- Regional clusters of employers could be brought together to form cross-employer job ladders, where the skills learned in one firm are prerequisites for skills learned in another firm. Again, worker voice would help in ensuring that these don't result in employer cartels.

## **Improve Data Collection and Studies of Workforce Training**

In addition to suggesting that workforce training programs must take labor market power into account to be successful, our review of the existing research suggests that existing studies of workforce training are insufficient. In the US, the literature has focused on finding a package of interventions that “work” in the sense of persistently raising worker wages within an experimental design. The ideal sectoral employment experiment would be run simultaneously in multiple sites, with multiple arms in each site varying the package of interventions, and would include a representative cross-section of low-wage American workers. The



representativeness would inform how gender, race, and ethnicity affect the success of workforce training programs. While there is good data on these heterogeneous effects, we do not yet understand what drives the differences. Directly measuring discrimination and whether or not racially hostile employment contexts are ameliorated to some extent as a result of training programs may be another direction for future work.

There may be some promise in harnessing new analytic methods to improve design of career ladders and training to support them: The ability to predict potential job ladders that result from a given package of skills and abilities in a given labor market might shed light on which training programs are likely to result in which kinds of medium-run job trajectories. Promising research in this vein is being conducted by Alex Bartik and Bryan Stuart in the context of Michigan employment centers. But we should be wary of data-as-panacea; in a world of persistent political, economic, and natural shocks, the ability to forecast skill-demands over a career may be extremely limited.<sup>41</sup>

Finally, evaluation of training programs should move beyond purely pecuniary gains that rely heavily on pecuniary valuations of work—be it cost-benefit analysis or even the more recently popularized marginal value of public funds.<sup>42</sup> But one of the results of a monopsonistic model of the labor market is that most workers are attached to jobs for a variety of nonpecuniary reasons (Maestas et al. 2019), and so earnings effects alone may not reflect beneficiaries' willingness to pay. Partly, this is just because work is costly for families, so differences in earnings don't necessarily reflect the pecuniary and nonpecuniary costs of the job (e.g., having to pay for childcare).

Evaluations too often focus on costs of administering programs versus the benefits that accrue to participants and deem the programs successes if participant earnings (or net impacts on the government budget, including margins like lower dependence on transfers) are higher than costs of training (including foregone earnings). While asking whether these programs provide

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<sup>41</sup> One of the merits of wealth over skill is that perfectly diversified portfolios can be held. If one wants to build a resilient workforce, increasing their stock of liquid assets may yield a better hedge than increasing skills that may fluctuate widely in price.

<sup>42</sup> Indeed, Hendren and Sprung-Keyser (2020) characterize the marginal value of public funds from a wide variety of training programs, finding that the MVPF of WorkAdvance and Year Up can be either greater than or less than 1 depending on whether participants value the program at cost or at after-tax earnings. Neither of these valuations likely captures the potential other costs or benefits of the jobs with the higher earnings (e.g., more or less nonpecuniary effects like effort, commutes, and childcare). When most workers are inframarginal, as monopsony implies, it is difficult to impute worker willingness to pay for different jobs.

a high “bang-for-the-buck” is useful, more use could be made of ethnographic methods, participant-observer studies, and diverse normative frameworks, reducing reliance on purely quantitative measures. How do training program participants themselves perceive their jobs, employers, and relationship to the labor market?

## **Consider Alternative Strategies for Fighting Inequality and Generating Greater Bargaining Power**

The Clean Slate Project for Worker Power at Harvard Law School brought together dozens of leaders from diverse areas to reimagine labor rights and propose promising legal, policy, and organizational strategies to increase workers’ bargaining power. Company investors hire representatives to bargain collectively on their behalf with workers, suppliers, customers, and policymakers. These collective bargaining agents for capital are called management. Unions allow more balanced bargaining between workers and investors. In addition to unions and collective bargaining, many other strategies can increase worker bargaining power.





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