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Evidence from a Meta-Analytic Review

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Abstract[1]

We report the results of a meta-analytic review of the effectiveness of programs designed to retrain workers. The review focuses on studies that rely on identification strategies designed to obtain credible causal effects. We analyze a total of 40 programs that provided skills to unemployed workers and focus on two outcomes: the probability of finding a job and wages. We find that the probability of finding a job of program participants increases on average by 2.6 percentage points after the program and wages increase by 0.08 of a standard deviation. Programs that provide technical skills, those that combine in-classroom with on-the-job training and those provided in partnership with the private sector seem to be more effective.

JEL classifications: J08
Keywords: Job training, Active labor market Programs, Meta-analytic review

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1. Introduction

Latin American economies often experience changes in relative prices that negatively affect some industries while benefiting others. In the face of structural changes, economic shocks, or economic policy changes (from trade liberalization to exchange rates fluctuations) sometimes require that policymakers implement training policies that facilitate the transition of workers from declining firms and industries to emerging employment opportunities may be a powerful tool. But, do training programs work?

In this paper we review the effectiveness of active labor market policies. To approximate the population of interest (i.e., workers who recently lost their jobs due to a negative shock) and introduce two restrictions in the set of programs analyzed. First, we focus on programs that aim to re-skill workers by providing them some form of training. Thus, we exclude from the analysis job search programs and employment subsidies, which may be effective in some contexts, but are less likely to succeed when displaced workers need to update their skills set to become employable in new emerging occupations or sectors. Second, we exclude from the analysis the so-called "youth training programs" that target first-time job seekers. That is, we focus on programs designed for workers with previous employment experience.

This review is based on the SkillsBank,[2] which systematically examines the effectiveness of programs that have been credibly evaluated. In other words, we only include in the analysis those programs that have followed an evaluation strategy where proper counterfactuals can be credibly constructed. Thus, the question of interest is not if program participants are more likely to be employed or to receive higher wages after the program concluded. Their labor market status may have improved even if they did not participate in the program, for example, if the labor market in their locality of residence is booming. Instead, we are interested in evaluations that deliver causal effects of the program on labor market outcomes. These studies compare the labor market status of program participants after participation in the program with the labor market status they *would have obtained had they not participated in the program*. This comparison requires a valid control group that serves to build this counterfactual. In our review we focus on studies that use multiple identification strategies to obtain credible causal effects. In particular, we rely on studies

[2] The SkillsBank, which can be found at https://skillsbank.iadb.org, is a web platform that provides a repository of rigorously evaluated programs designed to develop skills for people in different age groups (from early childhood to adulthood). References to all studies included in this paper can be found there.

that have used randomized control trials (RCT), regression discontinuity designs (RDD), difference in differences (Diff-in-Diff) and instrumental variable (IV) approaches.

In this systematic review of the literature, the unit of analysis is the program. Thus, if two or more studies analyze the effectiveness of the same program the effects are aggregated and considered a single evaluation. Similarly, it is common to provide effects after the program ended but at different time horizons—e.g., six months after participation and two years after participation. In this case, we report a weighted average[3] of the effect sizes reported, as detailed in the Appendix.

2. An Overview of Adult Retraining Programs

We analyze a total of 40 programs that provide skills to unemployed workers on two outcomes: the probability of finding a job and wages. In the two cases we standardize the effects reported in the different studies to a common metric. In the case of employment this is straightforward, as the majority of studies report the change in the probability of being employed due to the program, and when this is not reported it can be easily computed. In the case of wages, the standardization is somewhat more complicated, as some studies report the percentage increase (or reduction) of wages due to the programs and other report differences in means—that is, how many more (or fewer) additional dollars the program participants obtained due to program participation. We standardize the wage effects into a standardized mean difference, which is the difference in means divided by the standard deviation of wages. Thus, the wage effects of programs are interpreted as a percentage of the standard deviation of wages.

The range of programs analyzed is wide. We identify differences in program design on six important dimensions: the length of training, the type of skills provided, the location of training, the implementing agency, the supplier of training, and the region of implementation.

A typical program length is six months, but training programs are offered in a wide range of durations.[4] The shortest program is *The Jordan New Opportunities for Women*, a nine-day course in Jordan that provided soft skills such as communication, business writing, team building, teamwork, time management, and positive thinking skills (Groh et al., 2016). *Specific Professional Skills and Techniques (SPST)* is the longest program analyzed, which combined classroom

[3] The weights are proportional to the inverse of the variance of the estimated impact.
[4] The program implemented by the Nicaraguan NGO *Fundación Mujer y Desarrollo Comunitario* or FUMDEC is the only evaluation without information about length of intervention.

teaching and an internship in Germany for a total training period of up to two years. As we mentioned earlier, we exclude from this analysis programs that only target youth participants (age less than 25). Most programs analyzed target the working age population, while four interventions specifically target non-youth.

Although there is important variation across programs in the type of skills provided to participants, we classify them into two broad families. The most common program provides vocational training, where trainees learn technical skills leading to a craft or a trade that is currently demanded by employers. The Danish system of Labor Market Training Programs is a prominent example of vocational training program. This government program, conducted in 1994, consisted of classroom work in 24 training sites directed towards the needs of targeted industries (Rosholm and Skipper, 2009). There are 28 evaluations that provide vocational training leading to upgrade technical skills. A small subset of programs (3) provides soft skills to participants. The program, *Juventud y Empleo* from Dominican Republic is a prominent example, featuring two treatment arms: i) a combination of vocational training and soft skills including an internship, and ii) soft skills training only with an internship (Acevedo et al., 2017). Finally, a third group of 9 programs provides both types of training, technical and soft skills, to participants.

An important distinction is where the skills are provided. In 25 of the 40 programs skills are provided in the classroom, while in the remaining programs classroom instruction is complemented with an internship that takes place simultaneously, or at the end of the teaching period. All the internships take place in private firms. In some cases, the cost of the internship is fully paid by the employer, and in others, the implementer of the intervention subsidizes it. The program *Juventud y Empleo* includes classroom and on the job training. The most complete intervention arm received 75 hours of soft skills training, 150 hours of technical or vocational training and three months of internship at a private firm (Ibarrarán et al., 2014).

Some programs were implemented at a relatively small scale, while others were implemented more broadly. Although this is not always the case, small programs tend to be implemented by NGOs or multilateral organizations, while local or national governments often provide more ambitious interventions that target a larger population. The number of treated individuals in government evaluations is 2,545 on average, while the number of treated individuals in programs run by NGOs or multilateral organizations is 339.

3. The Effects of Skill Training Programs on Employment and Wages

Figures 1 and 2 present the results of the analysis on wages and employment, respectively. Even though many studies report the two outcomes, there is not a perfect overlap between the studies included in the wage analysis and those of the employment analysis, as some studies report one or the other. The analysis includes 296 effect sizes for wages and 152 for employment. The overall effect across all training programs examined on employment is positive and statistically significant at the 5 percent level. Overall, the probability of finding a job of program participants increases by 2.6 percentage points after the program. The effect on wages suggests that participating in a training program increases wages quite substantially, by 0.08 of a standard deviation. The effect is statistically significant at the 95 percent level.

There is substantial heterogeneity across program estimates which we summarize using the I-squared[5] statistic. In the case of wages this statistic is 98 percent (82 percent for employment), which indicates that most of the variation in effect sizes is not due to chance but rather to genuine heterogeneity across interventions. This suggests that the characteristics of the program and the context in which it was implemented are likely to be important.

To shed some light on the sources of heterogeneity, we move next to separate the impact of interventions by length (less and more than 480 hours of training), type of skills provided (technical skills, soft skills or both), nature of training (in the classroom only vs. a combination of classroom training plus an internship), implementing agency (government vs. NGOs or multinationals), the training provider (private vs. public) and region of implementation (Latin America and the Caribbean vs. other region). It should be noted that these categorizations are not mutually exclusive, and because the number of interventions we analyze is not large, they are unlikely to be balanced across categories. For example, many short interventions tend to be in the classroom only, while most long-term interventions combine classroom teaching with an internship. In addition, other important characteristics might also be correlated with duration. Thus, when comparing short vs. long-term interventions we are not necessarily making statements about the length of the program (since that discrimination could be picking up other differences between programs which are unrelated to their length). Still, it is interesting to see if some of the

[5] The I-squared statistic describes the percentage of variation across studies due to heterogeneity rather than chance.

characteristics discussed above stand out as important as they would suggest hypothesis that could be more formally tested in future research. Figures 3 and 4 summarize the results.

There is more uncertainty about the estimated impacts of long programs than of shorter ones (in part because of the difference in the number of studies in each category). While most short programs tend to obtain positive effects on employment and wages, we cannot reject that the effect of long programs on employment and wages is equal to zero. In the case of wages this is driven by the large uncertainty obtained in the seven interventions analyzed: the point estimate (0.07) suggests a 7 percent of a standard deviation increase, but with a wide confidence interval (-0.07, 0.20). The effects of short duration programs on employment (3 percentage point increase in the probability of employment) and wages (8 percent of a standard deviation increase) is instead statistically significant.

Providing technical skills seems to be more effective than providing soft skills. There is a small number of programs that solely provide soft skills, and those are not found to be effective. Perhaps more surprisingly, the effect of combined programs (technical plus soft skills) and those that provide just technical skills is virtually identical.

Small scale interventions run by NGOs and multilaterals obtain a larger impact on employment than government interventions, which tend to be implemented at a larger scale. These differences do not translate to wages, though. The wage effects of government and NGO/multinational-run programs are positive and significant, and although wage effects of NGO/multinational-run programs are slightly larger, the differences with government programs are not statistically significant.

The delivery of retraining programs also matters. Programs that combine classroom teaching with on-the-job internships present on average slightly larger impacts on employment and wages than those that just offer training in the classroom, but the differences between the two groups are not statistically different. Programs that are provided by private sector institutions display on average a larger increase in the probability of employment than those programs where the training has been designed and provided by public agencies (which on average attain no effects on employment). However, for wages these differences are not statistically significant.

We divided programs implemented in Latin America and the Caribbean from those in other regions. We see that neither in employment nor wages are there significant differences between treatment effects, since all intervals intersect. However, program effects on employment in Latin

America and the Caribbean are not statistically different from zero, while they are different from zero in the rest of the world, a feature that deserves further exploration.

4. Conclusion

To sum up, we have found that providing training for displaced workers may work. On average, training programs display non-negligible effects on employment and wages and provide a potentially viable route for re-skilling workers who have suffered the negative consequences of trade. However, the evidence also shows that there is substantial heterogeneity across the effectiveness of training initiatives. Programs need to be well-tuned to the needs of the labor market and the realities in place, and more systematic evaluations of programs are needed to begin to understand what works, and what does not work.

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Figures

Figure 1. Effect of Training Programs on Employment

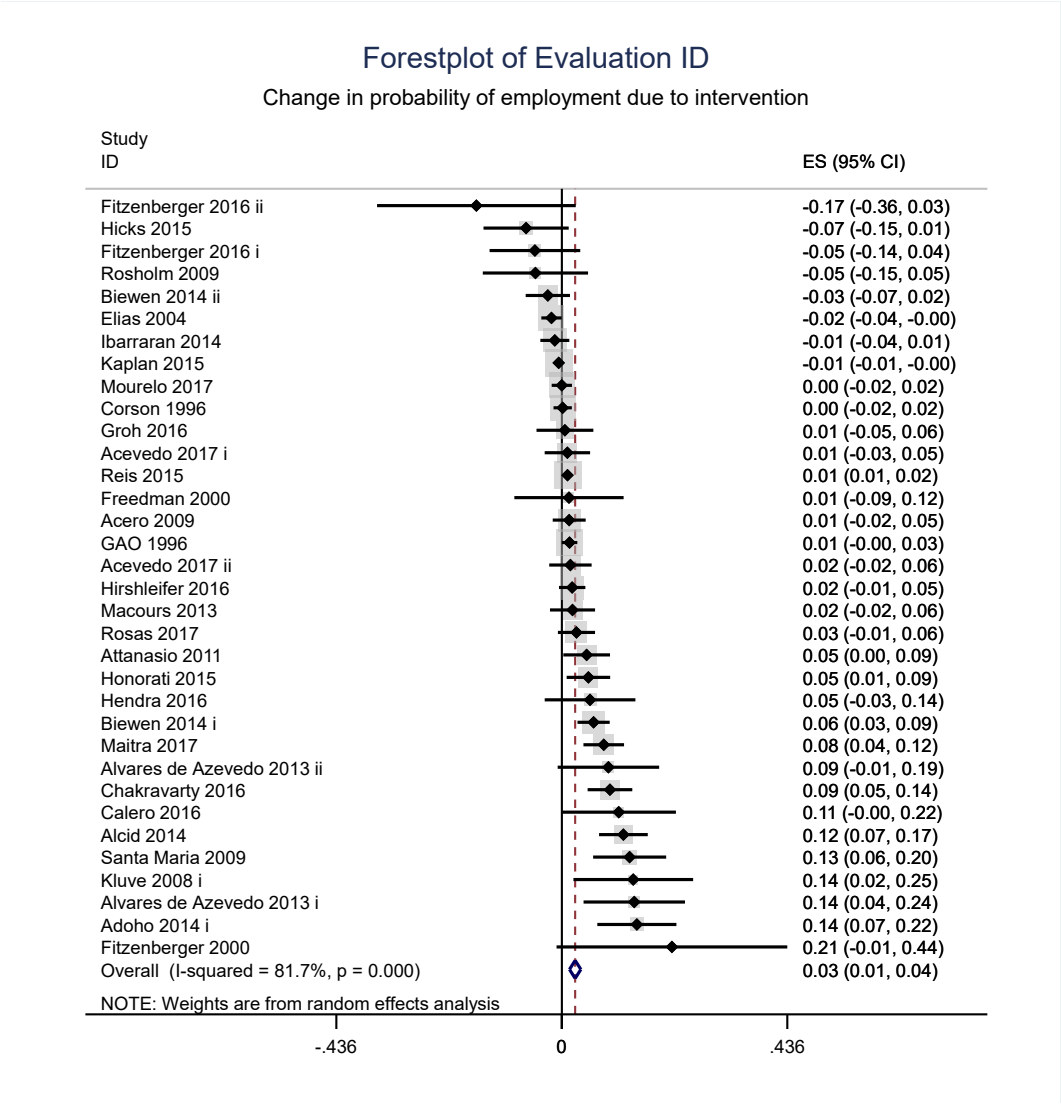

Figure 2. Effect of Training Programs on Wages

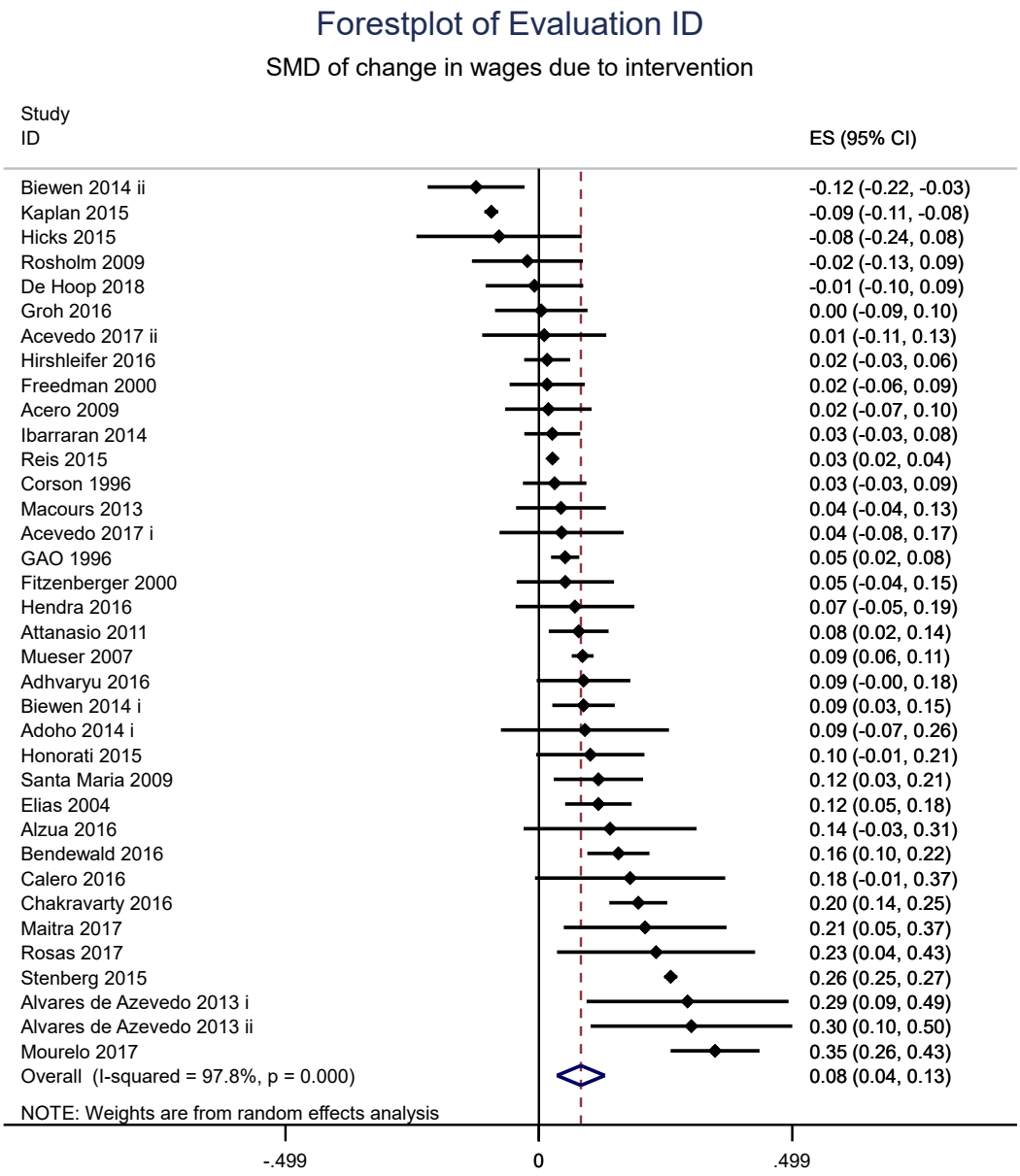

Figure 3. Heterogeneity: Employment Effects

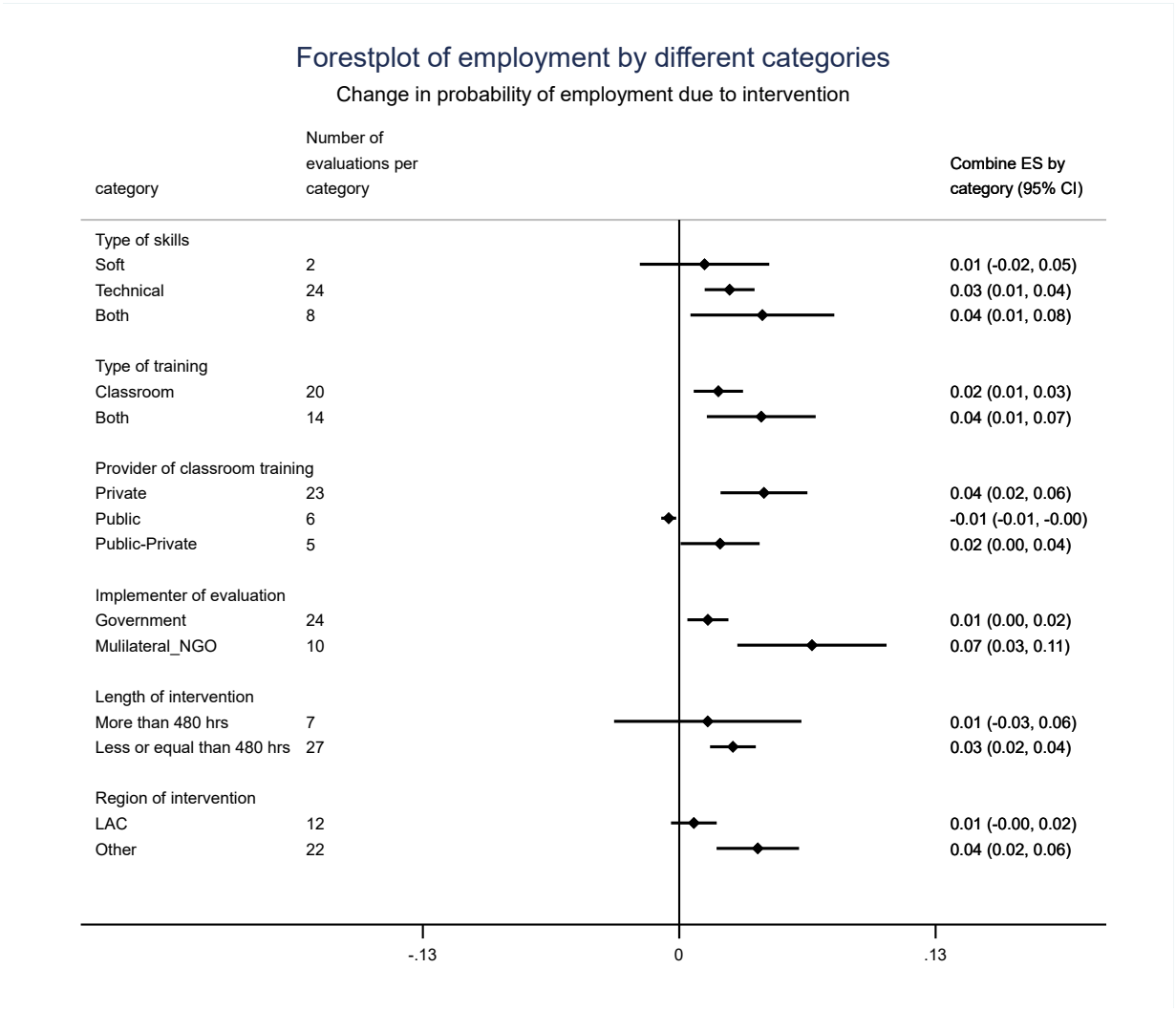

Figure 4. Heterogeneity: Wages Effects