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**Article**

The value of soft skills in the labor market

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Economists are increasingly focused on the importance of so-called "soft skills" for labor market success. The evidence is overwhelming that these skills — also called "non-cognitive skills" — are important drivers of success in school and in adult life. Yet the very term soft skills reveals our lack of understanding of what these skills are, how to measure them, and whether and how they can be developed. And the term "non-cognitive" is simply used to mean "not predicted by IQ or achievement tests.

The job market is way ahead of the ivory tower in emphasizing soft skills. Employers frequently list teamwork, collaboration, and oral and written communication skills as highly valuable yet hard-to-find qualities in potential new hires. A 2017 survey by the National Association of Colleges and Employers found that "ability to work in a team" was the most commonly desired attribute of new college graduates. Teamwork was followed closely by written and verbal communication skills and was listed ahead of problem-solving skills, analytical/quantitative skills, and other attributes that are emphasized in formal educational settings. Yet, until recently, economists have had very little to say about the importance of soft skills in the workplace.

In contrast, a large body of work in economics focuses broadly on the economics of skill development, education, and the labor market. He received the Early Career Award from the Association for Education Finance and Policy and was named a William T. Grant Scholar in 2013.

Research Summaries

The Value of Soft Skills in the Labor Market

David J. Deming

Economists are increasingly focused on the importance of so-called "soft skills" for labor market success. The evidence is overwhelming that these skills — also called "non-cognitive skills" — are important drivers of success in school and in adult life. Yet the very term soft skills reveals our lack of understanding of what these skills are, how to measure them, and whether and how they can be developed. And the term "non-cognitive" is simply used to mean "not predicted by IQ or achievement tests.

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STEM Jobs and the Slowdown in Demand for Cognitive Skills

While cognitive skills are still important predictors of labor market success, their importance has declined since 2000. An important recent paper finds significantly smaller labor market returns to cognitive skills in the early and mid-2000s, compared with the late 1980s and early 1990s. It compares the returns to cognitive skills across the 1979 and 1997 waves of the National Longitudinal Survey of Youth (NLSY) — the same survey that was used to document the importance of cognitive skills in several influential early papers. In a 2017 study, I replicated this finding and also show that returns to soft skills increased between the 1979 and 1997 NLSY waves. Moreover, recent findings suggest that employment and wage growth for managerial, professional, and technical occupations stalled considerably after 2000, which the researchers argue represents a "great reversal" in the demand for cognitive skills.

The slow overall growth of high-skilled jobs in the 2000s is driven by a decline in science, technology, engineering, and math (STEM) occupations. STEM jobs shrank as a share of all U.S. employment between 2000 and 2012, after growing strongly between 1980 and 2000. This relative decline of STEM jobs preceded the Great Recession. In contrast, between 2000 and 2012 non-STEM professional occupations such as managers, nurses, physicians, and finance and business support occupations grew at a faster rate than during the previous decade. The common thread among these non-STEM professional jobs is that they require strong analytical skills and significant interpersonal interaction. We are not witnessing an end to the importance of cognitive skills — rather, strong cognitive skills are increasingly a necessary — but not a sufficient — condition for obtaining a good, high-paying job. You also need to have social skills. Between 1980 and 2012, social skill-inten-
sive occupations grew by nearly 12 percent points as a share of all U.S. jobs. Wages also grew more rapidly for social skill-intensive occupations than for other occupations over this period. In contrast, both employment and wages grew more slowly for occupations with high math but low social skill requirements, including many STEM jobs. Directly comparing the returns to social skills in the NSLY 1979 and 1997 surveys, I find that social skills are a significantly more important predictor of lifetime employment and wages in the more recent cohort. Employment and wage growth have been especially strong for professional jobs that require both analytical and social skills.

In today’s economy, workers must be able to solve complex problems in fluid, rapidly changing, team-based settings.

### Why Are Social Skills Important in the Labor Market?

Why are social skills valued in the labor market, and why have they become more important in recent years? One possible cause is technological change. In a new article on the history of workplace automation, David Autor argues that new technologies generally increase the importance of skills and tasks for which there is still no good substitute. Machines are generally quite good — much better than humans — at performing routine, codifiable tasks. Machines are poor at solving explicit rules. However, people are still much better at open-ended tasks that require flexibility, creativity, and judgment. Often we perform these tasks with great skill despite lacking any explicit understanding of “rules,” as when we divine the motives of a person we just met, or when we try to determine whether it is appropriate to laugh at an off-color joke.

Social interaction is perhaps the most intuitive for most people, but it is very difficult to codify as a set of explicit instructions. Psychologists call this “theory of mind” — the ability to attribute mental states to others based on their behavior, or, more colloquially, to “put oneself into another’s shoes.”

Why would theory of mind be useful in the workplace? Workers vary naturally in their abilities over a large variety of workplace tasks, and this individual variability with similar average skill levels has a complex adaptive advantage in different tasks. Much of the research demonstrates that countries specializing in the production of goods and trade for mutual benefit are highly context-dependent.

### Measuring Soft Skills

Many studies have found that soft skills are associated with the production of earnings and other adult outcomes. Some studies also associate gains in long-run outcomes with gains in soft skills. Yet the study of soft skills is hamstrung by poor measurement and lack of definitional clarity. Most often, inferences about soft skills are made indirectly. For example, a consistent pattern in early childhood interventions is that these programs have long-run impacts on adult outcomes such as educational attainment and earnings. However, self-assessments of soft skills are not predictive — they measure the testing industry — have spent several decades and millions of dollars systematically improving and refining the measure of cognitive skills. The modern IQ test was created as a tool to diagnose intellectual delays and disabilities in children, yet it has proven devilish difficult to produce effective treatments for it, and beat humans in complex games such as chess, Go, and Jeopardy.

Some recent research uses behavioral measures such as school absences or suspensions to measure soft skills. These studies argue that behavioral measures are better because they are more predictive and less context-dependent. However, Shelly Chiodo demonstrates using school suspensions as a behavioral measure of impulsivity is problematic, since suspensions are also determined by school context, racial discrimination, and other unknown factors.

The deeper issue with using behaviors to measure soft skills is that sometimes behaviors are products of the underlying soft skill, but also many other things.

### The Testing Industry

However, self-assessments have a number of important problems that limit their usefulness for research and policy purposes. First, they are highly context-dependent. Some recent evidence suggests that there is significant correlation between conscientiousness and average hours worked is negative. South Koreans work nearly 2,500 hours per year, compared to around 1,500 hours for workers in France. Yet out of 26 countries, France places fourth and South Korea places 25th in self-reported conscientiousness.

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Researchers ought to stop relying on convenient, often flawed, self-assessments of soft skills and start creating metrics that are theoretically sound and suitable for the task at hand. I am as guilty as anyone else when it comes to using these metrics. First, they are not designed to research and policy purposes. First, they are highly context-dependent. Some recent evidence suggests that there is significant correlation between conscientiousness and average hours worked is negative. South Koreans work nearly 2,500 hours per year, compared to around 1,500 hours for workers in France. Yet out of 26 countries, France places fourth and South Korea places 25th in self-reported conscientiousness.

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mapping between theoretical constructs and differentially predictive for some groups? A the RMET predict life outcomes at all? Is it many open questions to be answered. Does and measures of socioeconomic status such the correlation between social intelligence in a broader population, and that addresses While there are many studies that probe the theory of mind) relates to task performance (emotion recognition in human faces). While there are many studies that probe the validity and reliability of the RMET across settings, I am not aware of any large-scale study that measures RMET performance in a broader population, and that addresses the correlation between social intelligence and measures of socioeconomic status such as creativity, self-control, and adaptability would be a foundational contribution.