

# JOBS



## TOWARDS DIAGNOSING JOB CHALLENGES IN THE GREEN TRANSITION

**Climate change and natural resource degradation are prompting a paradigm shift in how we produce, consume, and trade.** Much job churning will result. Jobs will be lost or reconfigured, and new employment opportunities will arise. In the aggregate, employment effects may eventually be limited, but the effects are likely concentrated across sectors, occupations and regions. As a result, to sustain the green transition, it will need to be just, with broad participation in the job gains and sufficient compensation for the losses and adjustments. To guide the process, theories of job changes and tools to measure them are needed.

Thus far, the theoretical and empirical work on jobs and the green transition is incipient only. But it is rapidly evolving. **This K4J issue features some new approaches to examine job challenges during the green transition. It draws on recent work informing a just coal transition in Eastern Europe as well as on some emerging attempts to analyze the job implications of greening the agri-food system.** Both sectors (energy and agri-food) are at the heart of the green transition. Key questions to address include the number and profile of the workers affected (directly and indirectly), their preferences regarding job attributes and new employment opportunities, the potential for, and location of, new job opportunities (local versus elsewhere), and how best to assist the transition to new employment opportunities or out of the workforce.

The set of recent papers in the first and second section below present a few innovative ways to address some of these questions. The trilogy of papers from the Wielkopolska, Silesia and Lower Silesia regions in Poland: 1) present a new bottom-up approach to calculate the number of workers indirectly affected by coal mine closures; 2) conduct discrete choice experiments to elicit the preferences of coal affected workers with respect to job attributes; and 3) develop a new AI-powered job matching tool to identify optimal alternative employment opportunities for affected workers (within the current labor markets or following new investments). The paper from Ruda Śląska maps

the community's sectoral preferences to repurpose the mines' lands and assets, including for job creation. Assessing the number (and profile) of jobs affected is a major preoccupation across sectors. The "Jobs, greening and agri-food" paper does this using an existing, integrated agricultural assessment model. The second set of papers then lists some key references on which this recent work builds.

**But much work remains to be done to better balance the social (jobs) and environmental (carbon neutrality) trade-offs and broker a just transition.** On all fronts, more efforts are needed, to determine the number and skill profile of affected workers, to conduct more worker preference assessments, to identify job rich alternative investments, to test the effectiveness of transition support schemes (including their governance arrangements), and to further develop and operationalize job matching tools. Building on the current work, **the Jobs Group is gearing up to fully engage with the just green transition agenda, initially with a particular focus on three sectors: energy, agri-food, and urban/spatial.**



Luc Christiaensen  
K4J Guest Editor  
Program Manager  
Jobs Group



Kevwe Pela  
K4J Coordinator  
Economist  
Jobs Group



Carla Froy  
K4J Editor  
Consultant  
Jobs Group

## FEATURED STUDIES IN THIS DIGEST

### **Towards a Just Coal Transition Labor Market Challenges and People's Perspectives from Wielkopolska**

Christiaensen et al. | Working Paper | October 2022

This paper is part of a three-region set of papers analyzing coal-related labor market challenges in [Silesia](#), Lower [Silesia](#) and [Wielkopolska](#), in Poland. This study focuses on Wielkopolska, which is the most advanced in the transition out of coal. The findings highlight a more territorial-oriented approach to brokering the coal transition, rather than a sectoral one. First, even though limited from a regional perspective, affected jobs are highly concentrated in a few already lagging and

### **Who is most Vulnerable to the Transition away from Coal? Ruda Śląska Residents' Preferences towards Jobs and Land Repurposing**

Honorati, Ferré & Gajderowicz | Working Paper | May 2023

While the out-of-coal transition in Silesia is less advanced than in other regions, individuals working directly or indirectly in the coal mining sector will be gradually dismissed from the mining conglomerates. This paper zooms in on the labor market challenges regarding the out-of-coal transition in Ruda Śląska, a municipality located in the vicinity of Katowice where about one in five workers is employed in

depopulating municipalities. Second, while coal-related workers are similarly skilled as other workers in Wielkopolska, non-coal-related workers in the at-risk municipalities are substantially less skilled, exposing them to potential displacement effects. Finally, discrete choice experiments about their job attribute preferences show that all workers are averse both to commuting and relocating for work, even more so than in Silesia and Lower Silesia.

the coal value chain. The paper estimates the number of directly and indirectly affected workers and states that, as with other workers likely to be highly affected by the transition away from coal, Ruda Śląska residents are reluctant to relocate and commute for work and prefer job stability. It further examines the affected people's profiles, job perspectives, and opportunities.

---

## **Jobs, Food and Greening: Exploring the Implications of the Green Transition for Jobs in the Agri-food System**

Gianluigi & Christiaensen | Working Paper | May 2023

The agri-food system (AFS) employs about one-third of the global workforce and contributes about one-third of global greenhouse gas (GHG) emissions. This, together with its significant exposure to the effects of climate change and environmental degradation, makes what happens in AFS central to the green transition and its implications for jobs and structural transformation. In this paper, microeconomic evidence suggests that adopting climate-smart agricultural practices will increase labor requirements, at least in the short run and at lower income levels, when its mechanization is still limited. Overall, the findings underscore the tremendous potential of increasing agricultural and climate-friendly R&D investment for brokering an environmentally sustainable structural transformation.

## OTHER ESSENTIAL READINGS ON THE TOPIC

### **EU Coal Regions: Opportunities and Challenges Ahead**

Alves Diaz et al. | Report | July 2018

The European coal sector employs nearly half-million people in direct and indirect activities. By 2030, it is estimated that around 160,000 direct jobs may be lost. This paper focuses on the socioeconomic factors to ensure a just transition. It provides recommendations to foster regional development based on a carefully planned restructuring process in which renewable energy plays a central role, aiming to support redundant coal workers. According to the report, new employment and business opportunities can be created by building on the industrial heritage of the

### **Speaking the Same Language: A Machine Learning Approach to Classify Skills in Burning Glass Technologies Data**

Lassébie et al. | Report | November 2021

This report presents a methodology to classify skill requirements in online job postings into a pre-existing expert-driven taxonomy of broader skill categories. The proposed approach uses a semi-supervised Machine Learning algorithm and relies on the actual meaning and definition of the skills. The outcome of the classification exercise is validated using O\*NET information on skills by occupations and by benchmarking the results of some empirical descriptive exercises against the existing literature.

affected regions and establishing new, competitive industries and services. Close cooperation between companies, regulators, investors, land-use planners, and local communities is essential to identify sustainable uses and maximize social-economic development.

Compared to manual classification, the proposed approach organizes large amounts of skills information in an analytically tractable form, with considerable time and human resources savings.

---

### **Preferences for Work Arrangements: A Discrete Choice Experiment**

Valet, Sauer & Tolsma | Research Article | July 2021

This study investigates individual preferences for work arrangements in a discrete choice experiment performed in Germany and the Netherlands. The research identified six essential job attributes—earnings, job security, training opportunities, scheduling flexibility, prestige of the company, and gender composition of the work team—and mapped these into hypothetical job offers. Findings revealed that respondents considered all six job attributes in their decision process but had different priorities for each. Moreover, the study found gendered preferences: women preferred scheduling flexibility and a company with a good reputation, whereas men preferred jobs with high earnings and a permanent contract.

### **Spain, Towards a Just Energy Transition**

Instituto para la Transición Justa | Report | July 2022

This report provides broader guidance about the just coal transition process in Spain by describing the effects and measures taken in the Transition Strategy with an Urgent Action Plan launched in 2019. Among the initiatives to improve the employability and protection of the working population directly affected by the closures, the Government has ensured the provision of social assistance in the form of early retirement or voluntary redundancies; the creation of job banks to prioritize the incorporation of affected employees into dismantling operations, environmental restoration projects and any other business activities supported within the framework of the Just Transition Agreements. Additional measures have also been deployed to promote business development and activities that will help to create a sustainable economic model through supporting small investment projects.

---

### **Measures, Drivers and Effects of Green Employment: Evidence from US Local Labor Markets, 2006–2014**

Vona, Marin & Consoli | Journal Article | July 2018

This paper explores the nature and the key empirical regularities of green employment in the US local labor markets in 2006–2014. The main methodological novelty consists of a new measure of green employment based on the task content of occupations. Descriptive analysis reveals that green employment is pro-cyclical, highly skilled, commands a 4% wage premium, and is geographically concentrated. Green employment dynamics positively correlate with local green subsidies within the American Recovery and Reinvestment Act, local green knowledge, and resilience to the great recession. Finally, the report finds that one additional green job is associated with 4.2 (2.2 in the crisis period) new local jobs in non-tradable non-green activities.

# RECENT PAPERS ON THE BROADER JOBS' AGENDA

## **Minimum Income and Active Labour Market Policies: The Traps of the Work-First Approaches**

Ciarini, Girardi & Pulignano | Chapter | 2023

As a result of the crisis and the increased number of working poor, European countries have deployed a variety of policy tools to strengthen this pillar of welfare supply: minimum income schemes, means-tested income support anti-poverty schemes, tax credits, and in-work benefits aimed at increasing work incentives for low-income workers and their families, active labor market policies as well as dedicated social services (housing, education, childcare, and healthcare) to facilitate social inclusion. Therefore, European countries can now rely on an extended social safety net to fight poverty and social exclusion. The chapter of this book *-Social Investment and Institutional Change-* analyzes the impact of such reforms with a strong emphasis on labor and economic trade-offs.

## **Job Quality and Workforce Development**

Rubin | Chapter | 2023

Many American workers are not returning to workplaces as the pandemic recession eases. Employers in many sectors and regions of the country need help securing the talent they need. The causes of this phenomenon are many: concern about workplace safety, limited childcare options, and accumulated financial cushions, to name just a few. American workers are frustrated with the quality of their jobs and are unwilling to return to the conditions they faced before the pandemic. The decline in job quality dates to the early 1970s when the social contract between labor, employers, and the government began to fragment in multiple ways. The chapter of this book *-Rethinking Work-* details JVS Boston's job quality strategy, definitions, tools, and policy advocacy and how they are used to improve job quality.

---

## **Job Quality Continuity and Change in Later Working Life and the Mediating Role of Mental and Physical Health on Employment Participation**

Stiller, Ebener & Hasselhorn | Article | March 2023

Past research has focused on investigating single job quality characteristics but has yet to pay attention to their combined effects on health and employment. To address this limitation, this article built an established typology based on nine job quality characteristics, representing five profiles of overall poor or good job quality constellations among manual and non-manual older workers. It investigated how constant and changing job quality affects non-employment and how

## **The Labor Market Returns to Very Short Postsecondary Certificates**

Darolia, Guo & Kim | Working Paper | April 2023

Major policy initiatives and high award rates have led to questions about the value of short-term postsecondary credentials. This study examines the labor market returns to very short certificates, including those requiring only a few credits. The research does not find strong evidence that rapid certificates (those that require 6 credits or fewer) have lower immediate labor market returns than longer but still short-term certificates (7-36 credits). Rapid certificates yield the greatest immediate earnings and employment gains for health students, though these benefits appear to fade



mental and physical health mediates this association. Among the findings, the article highlights that health risks of poor later-life job quality demand critical consideration to maintain employability, particularly for manual workers in poor-quality jobs.

out. The study finds that compared to pre-enrollment, health and skilled trades students who earned a rapid certificate are likelier to switch to an establishment whose industry aligns with the field of study.

---

## The Unexpected Compression: Competition at Work in the Low Wage Labor Market

Autor, Dube & McGrew | Working Paper | March 2023

Labor market tightness following the height of the Covid-19 pandemic led to an unexpected compression in the US wage distribution that reflects an increase in labor market competition. Rapid relative wage growth at the bottom of the distribution reduced the college wage premium. The wage compression was accompanied by rapid nominal wage growth and rising job-to-job separations. Simultaneously, the wage-separation elasticity rose among young non-college workers, with wage gains concentrated among workers who changed employers and industries. The study finds that the pandemic increased the elasticity of labor supply to firms in the low-wage labor market, reducing employer market power and spurring rapid relative wage growth among young non-college workers who disproportionately moved from lower-paying to higher-paying and potentially more-productive jobs.

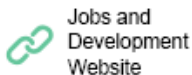
---

### CONTRIBUTORS

This newsletter is a joint product of the Jobs Group and the Labor & Skills Global Solutions Group of Social Protection & Jobs Global Practice. For more information kindly contact Carla Agustina Froy ([cfroy@worldbank.org](mailto:cfroy@worldbank.org)).

Want to share your recent publication or event for inclusion in our monthly newsletter? Email [cfroy@worldbank.org](mailto:cfroy@worldbank.org)

[Click to view past editions](#) | [Sign up to receive future editions of the Knowledge4Jobs Newsletters](#)



---

Copyright © 2023 World Bank Group, All rights reserved.

You are receiving this email because you opted in

Our mailing address is:

World Bank Group

1818 H St NW, Washington, DC 20433

[Subscribe](#) | [Unsubscribe from this list](#)