The coal transition in Poland: Lessons from the Past

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This presentation

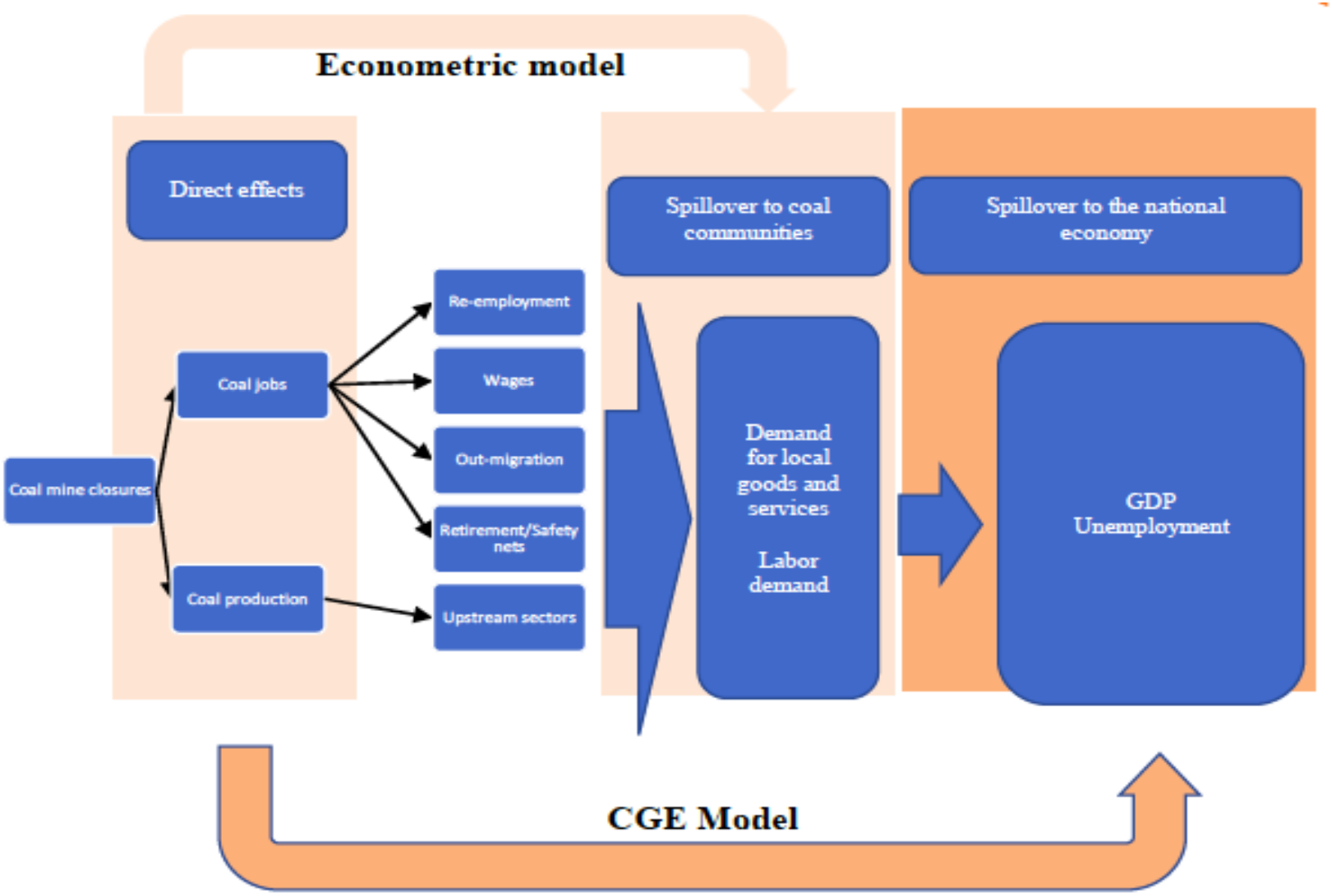
- Main findings of the labor section of the report "***Poland Energy Transition: The Path to Sustainability in the Electricity and Heating Sector***"
- Joint work between the Energy and Jobs GPs
- Methodology: CGE and local labor markets approach
- Results
- Policy implications

Two-step approach

- Partial-equilibrium energy model is used to forecast the decline in coal production and employment under different emission scenarios until 2030.

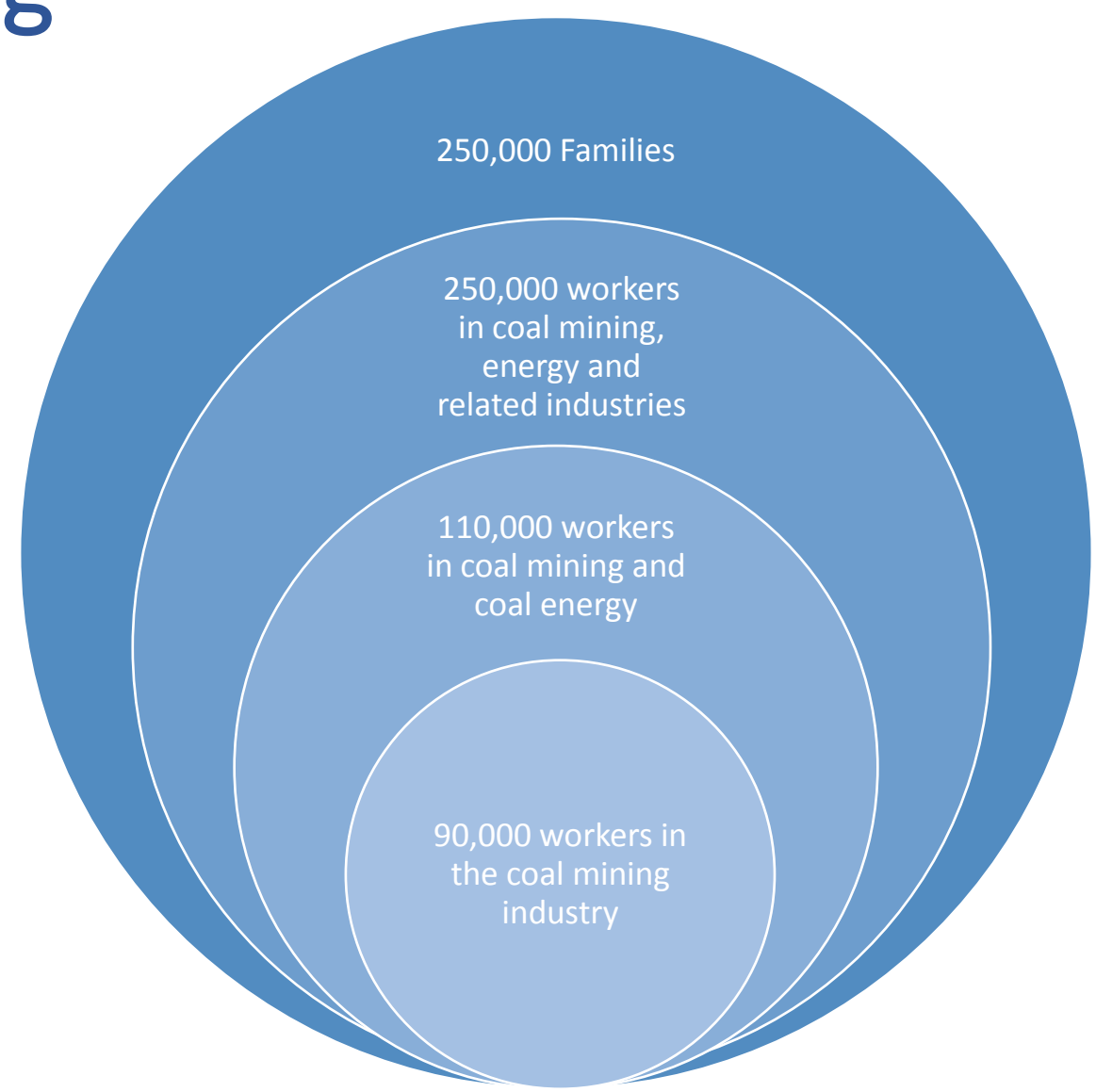
- The predicted declines in coal employment and production are used as inputs in the labor and CGE models to assess the spill-over impacts under the different emission scenarios.

Assessing the spill-over impacts under different emission scenarios: CGE vs. Econometric Model.



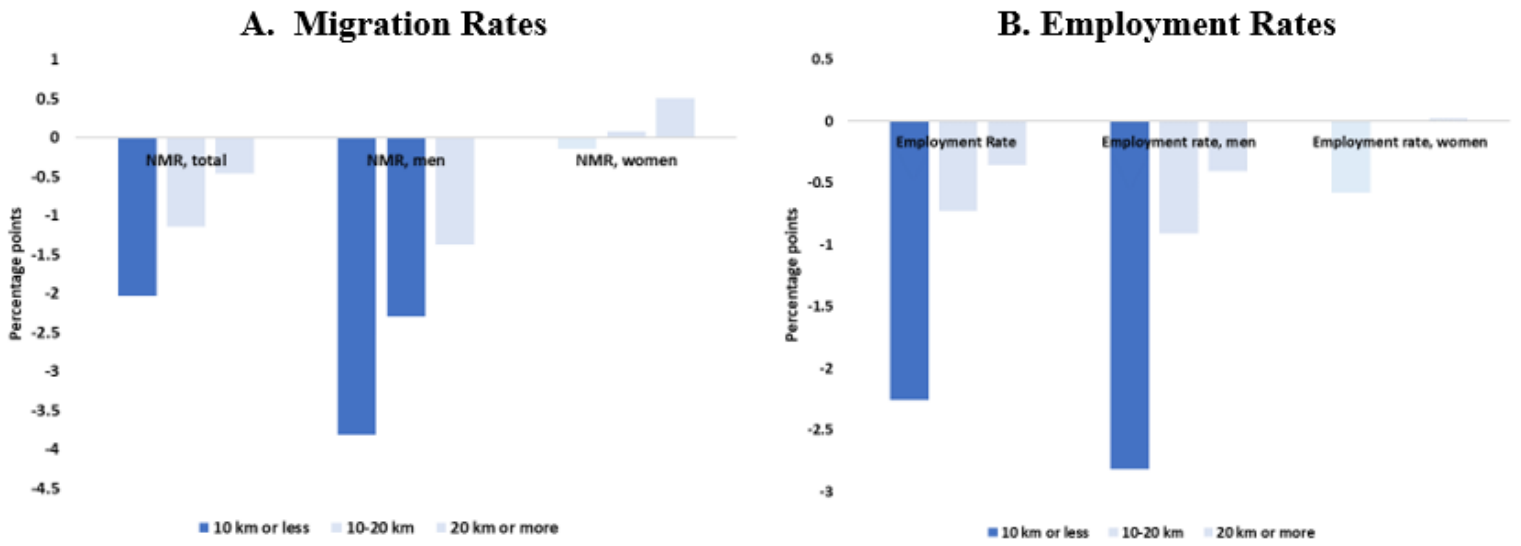
A static view is misleading

These figures do not consider the fact that workers, businesses and regions may be able to find and create new jobs, cushioning the final impacts on the economy.



Previous declines in the coal industry in Poland had negative, but small, impacts on local communities.

Figure 2.9: Extended Efforts Scenario: Change in Migration and Employment



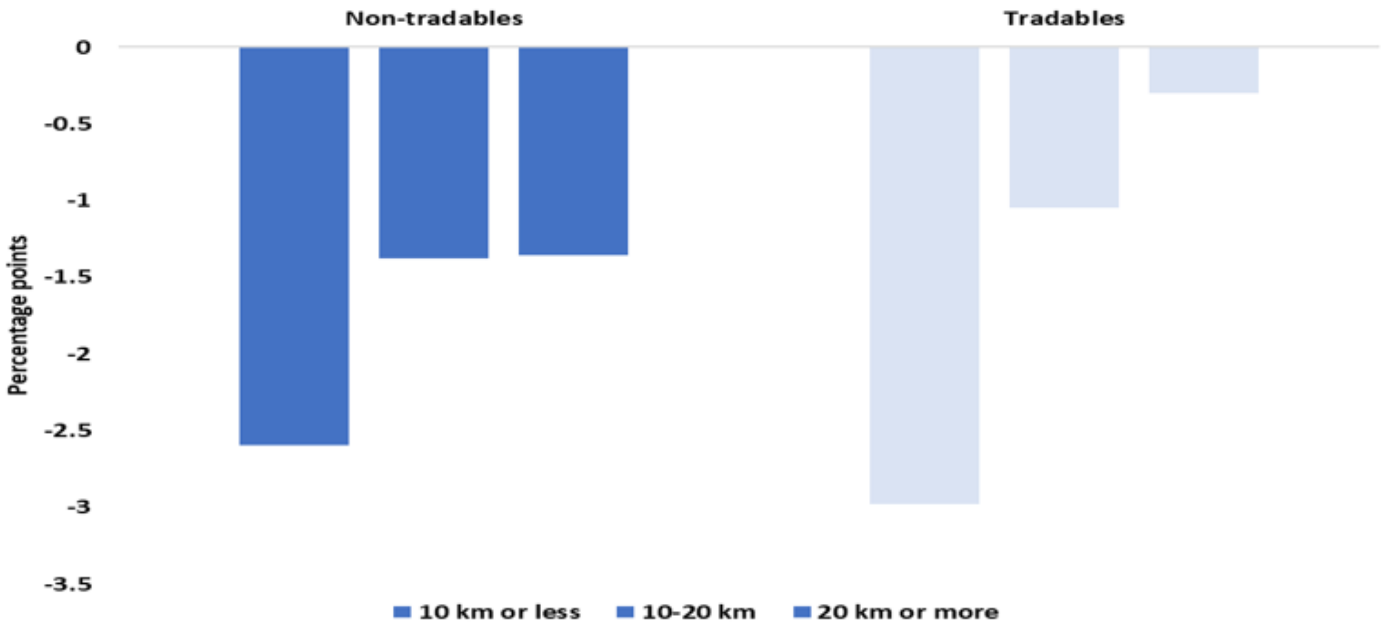
Note: Only dark blue bars are statistically different from zero. The net migration rate is the number of individual inflows minus the number of individual outflows, per 1,000 inhabitants. Each bar shows the decline in net migration and employment rates in municipalities within the radius compared to those outside as coal production declines according to the Extended Efforts Scenario. The employment figures exclude those in firms with 9 employees or less.

Impacts of a 20 percent fall in coal production/employment:

- Net migration rates decline by an additional 2 people net flows per 1,000 inhabitants from areas within 10 kilometers of the coal deposits compared to areas further away (left figure)
- Employment rates decline by 2.3 percentage points more within 10 kilometers of the coal deposits compared to areas further away (right figure)
- These impacts are only experienced by men.

Non-coal job destruction was driven by firms in the non-tradable sector

Figure 2.10. The Extended Efforts Scenario and the Number of Non-Mining Firms



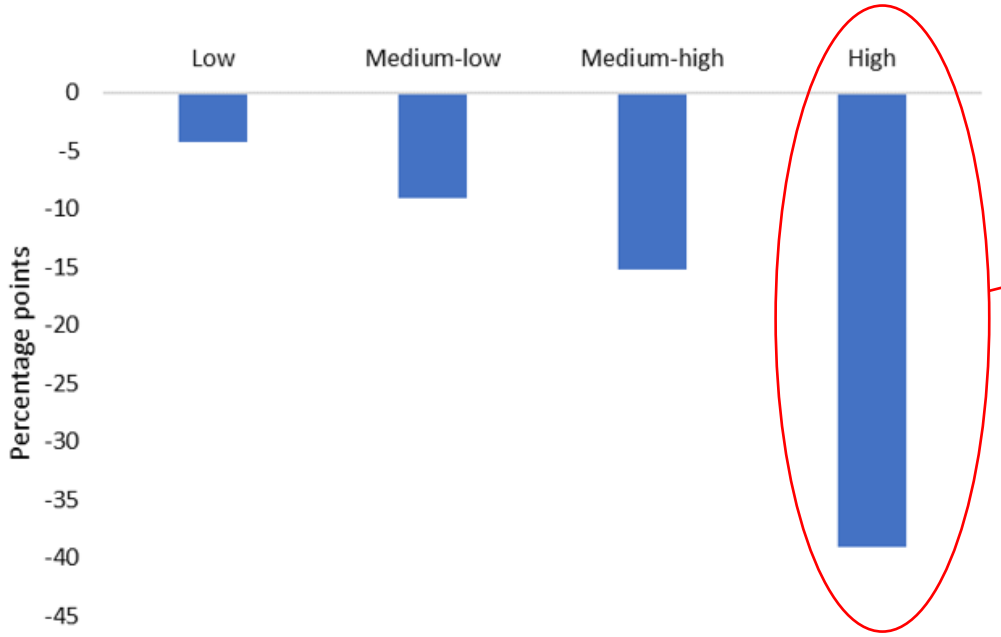
Source: Data from the REGON firm registry, 1995-2009. Excludes SOEs.
Note: Only dark blue bars are statistically different from zero.

Impacts of a 20 percent fall in coal production/employment:

- Firms selling non-tradable products were particularly vulnerable because they depend almost exclusively on local purchasing power.
- The number of firms dealing with non-tradables fell by more than 2.5 percent more in areas within 10 kilometers of coal deposits.

Firms with strong links to the coal sector suffered disproportionately

Figure 2.11: Effect of Decline in Coal Production on Supplier Jobs by Degree of Dependence



Source: Orbis data for a balanced panel of firms, 2000–19.
Note: Each bar shows the average decline in percentage points in number of private supplier employees when coal production as in the Extended Efforts scenario.

Impacts of a 20 percent fall in coal production/employment:

- Firms that depend closely on the coal sector to buy their products and services were severely affected; in fact, they cut employment by 40 percent

Will this time be different? (1)

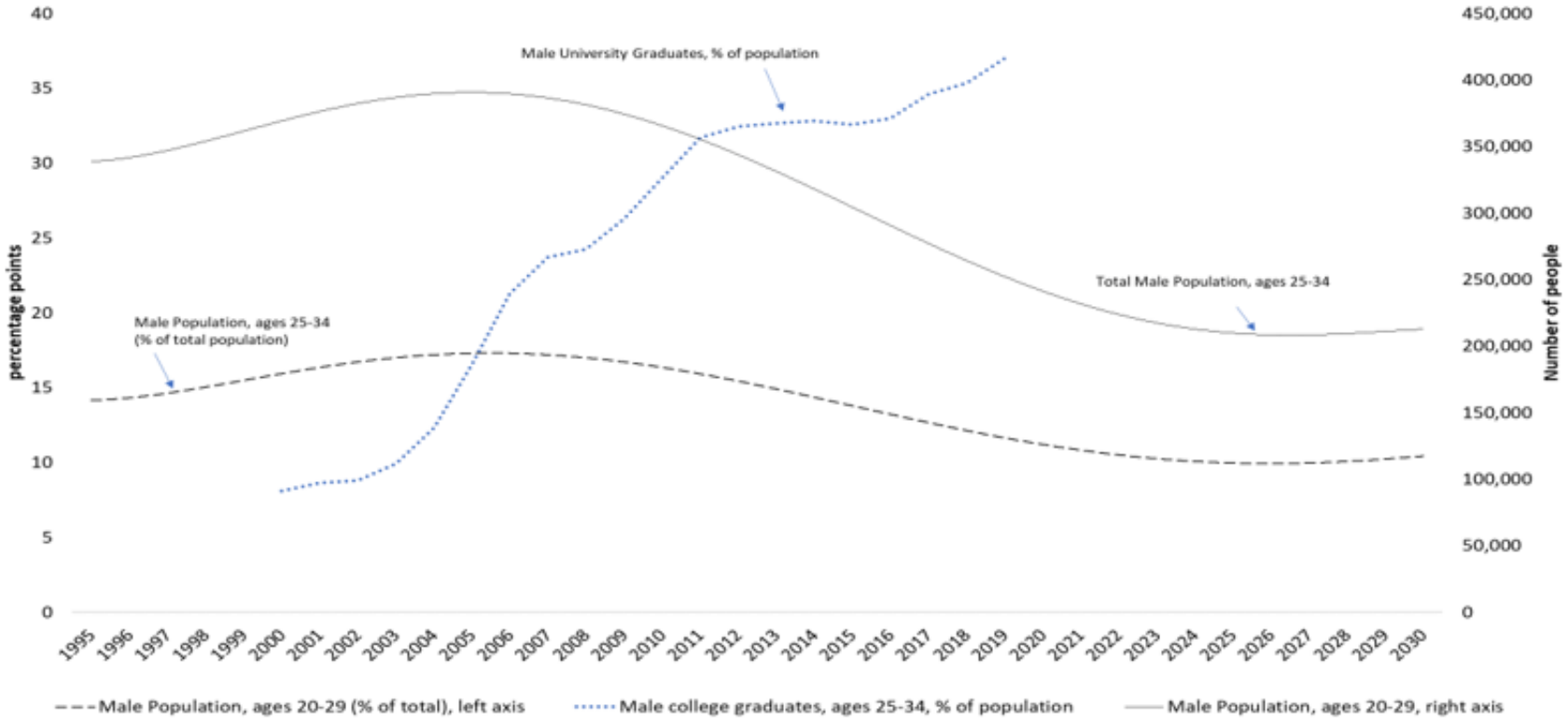
Several factors suggest that any new restructuring of the coal sector would have at most smaller effects than those experienced in the 1990s:

1. The earlier changes were part of a major change in how the economy was organized.
2. Today Poland's economy is highly resilient and labor markets are tight
3. The availability of new forms of clean energy may in themselves create new job opportunities.
4. Coal regions in Poland are substantially more economically diversified today than they were in the 1990s.

Will this time be different? (2)

Finally, the aging of the population will contribute to a smoother transition by natural attrition of the labor force in coal.

Figure 2.13. Demographic Change in Silesia, 1995–2030



Source: Data from Eurostat and the Polish Institute of Statistics.

The results from the CGE model are consistent with these predictions

Figure 2.14. Coal Transition has Negligible Impacts on the National Economy

Source: Simulations using the CGE model.

Policy implications (1): The impacts are not equally distributed

- Coal regions and unskilled coal workers would suffer disproportionately.
- Thereby, the political economy aspects of the coal transition should not be disregarded.
- The role of trade unions and their importance for Silesia's cultural identity imply that from a political economy perspective, even relatively small job losses may create substantial tensions.

Policy implications (2): Life cycle approach

15-24 years

- About 5 percent of all coal mine workers
- Not fully invested in the sector and more likely to engage in training or be re-employed locally or elsewhere.

25-44 years

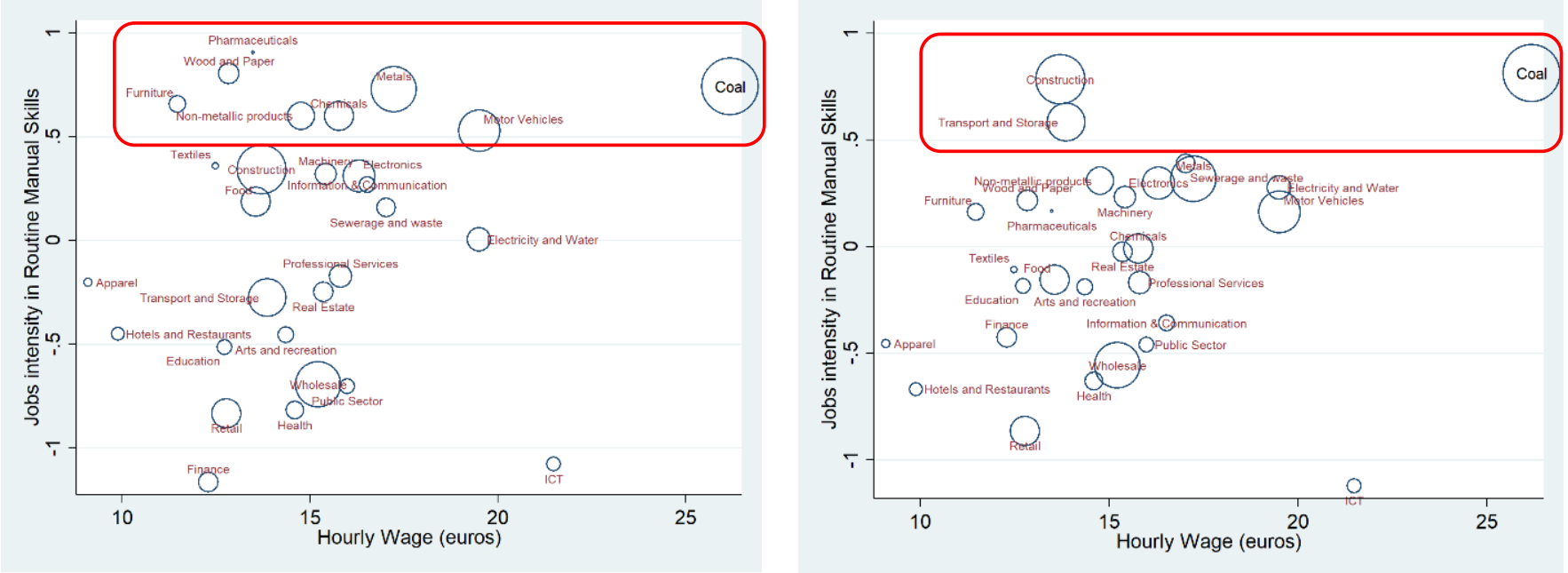
- About 65 percent of all coal mine workers
- More tied to the community and may therefore require more assistance to cope with joblessness.
- Since about 90 percent of coal workers are high school graduates, assessing their skills for re-employment elsewhere may be necessary
- It is recommended that social service programs be launched before workers leave their jobs to (a) establish eligibility, and assess interest in, temporary income support, ALMPs, or retirement options; (b) provide initial job counseling and placement services, preferably at the work site.

45+ years

- About 30% of all coal mine workers
- Many could be eligible for early retirement
- However, keeping incentives for labor force participation is important

Policy Implications (3): Identify job opportunities for coal workers without a college degree

Figure 3.6. Feasible Job Opportunities for Coal Workers in the Silesian Region

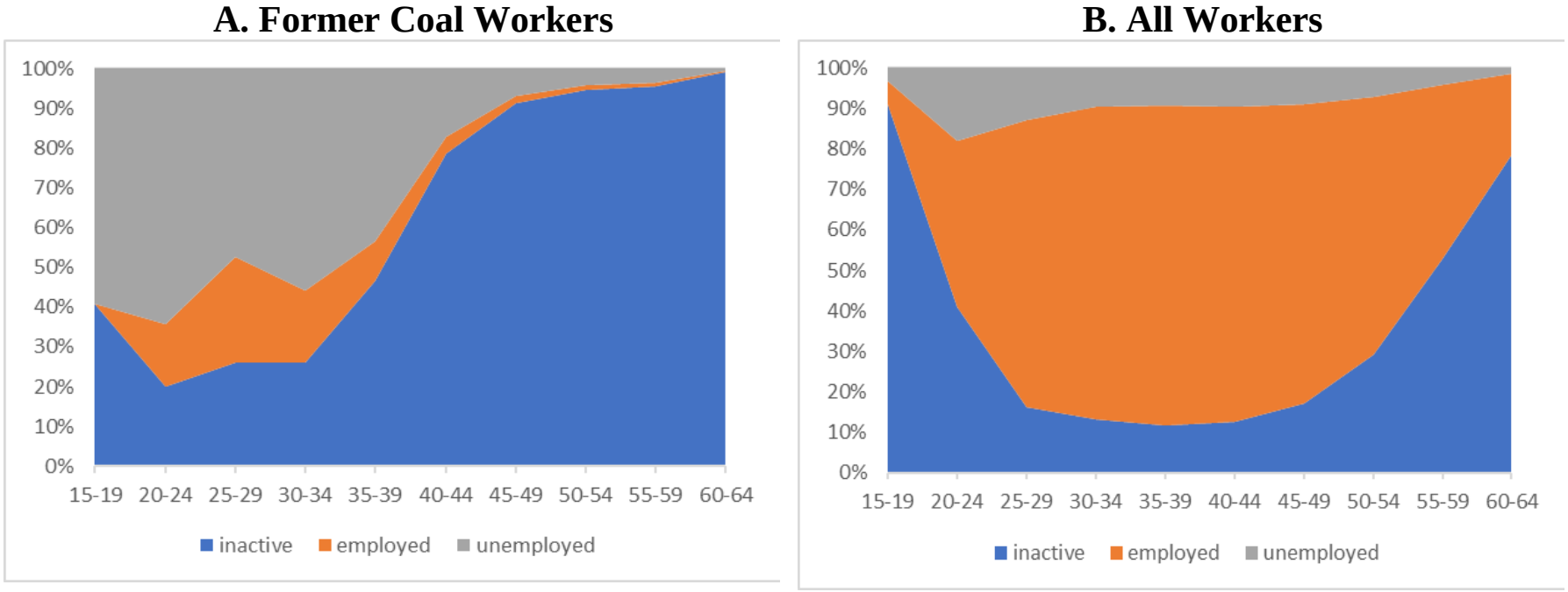


Note: Each bubble shows the average skill intensity of jobs and the average hourly wage of each sector. The sample consisted of male workers in Silesia with a high school education, aged 20 to 39 years. The size of the bubble is proportional to the number of jobs in the sector. The red rectangle highlights jobs with skill requirements **similar** to those of the coal sector. Skill intensity is measured using the Acemoglu and Autor (2011 methodology. The task content of jobs from O*NET is applied to the 3-digit ISCO 08 occupational classification from the Structural Earnings Survey (2010).

Policy Implications (4): Promote labor market attachment

Redundancy packages should not be conditional on employment status

Figure 3.7 Labor Market Outcomes, Former Coal Workers and Other Workers. By Age, Percent



Source: Data from LFS 2000–2014.

Policy Implications (5): Migration, health and targeting options

- Migration: Former mining workers who move to another location are more likely to be employed than those who stay behind.
  - However, only prime-age workers with secondary or tertiary education seem to use this strategy.
  - Providing assistance to overcome credit constraints and lack of information about jobs in other regions for workers with less education or with mobility barriers may be an effective way to facilitate their re-employment elsewhere.
- Because coal mine jobs can undermine workers' health, it will be important to identify if inactivity is due to disability.
  - Almost 40 percent of former coal workers aged 20–39 are inactive for health reasons
- Policies targeted to helping regions affected rather than workers should be carefully designed.
  - Regional subsidies could have the unintended consequence of postponing—instead of preventing—adjustment.
  - If they raise prices and labor costs, they can damage the competitiveness the region needs to support a successful tradable sector.
  - In contrast, policies to protect workers tend to be less distortionary and better targeted to those who need assistance most.

Final Remarks

- Local communities would suffer from the modest spillover effects of reduced coal production and fewer jobs but the impacts on the national economy would be negligible.
- Past waves of coal sector restructuring had negative but small impacts on employment, and for several reasons the effects of new declines will probably be even smaller.
- However, these negative impacts are highly concentrated geographically, and on unskilled men.
- Policies to facilitate the re-employment of former coal workers, and promoting their labor market attachment will be a crucial ingredient of *a just transition*.