

Climate Policy, Employment, and a Gender Bias? Evidence from European Regions

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Extended Abstract

The effects of climate policies on socioeconomic outcomes are intensively discussed both in academia and politics. The literature on the employment effects of environmental policies tends to find aggregate effects of climate policy, which is commonly proxied by the changes in energy prices (e.g. Marin and Vona (2021)), to be small (e.g. Metcalf and Stock (2020), Morgenstern (2002)), yet highly heterogeneous along various dimensions. Empirically, Hille and Möbius (2019) find heterogeneous effects across sectors and countries, while Marin and Vona (2019, 2021) document that climate policies are skill-biased against manual workers and favor technicians. Similarly, the firm level effects are dependent on the degrees of trade-exposure and energy-intensity (Marin and Vona (2021), Dussaux (2020)).

The potentially different responses in the labor market outcomes to climate policy across gender is increasingly put on the agenda (e.g. Czako (2020), Lau et al. (2021), MacArthur and Dyer (2021)). Lau et al. (2021) point towards different degrees of exposure of males and females to climate policy, which might be due to the differences in adaptation and innovation as well as mobility patterns. Geographic mobility among men is commonly found to be higher (e.g. Bunting (1960), Paci et al. (2007)), while the energy intensive industries which are more exposed to climate policy are male dominated (Czako (2020)).

In this paper, we present the first empirical analysis on the gender differences in labor market outcomes in response to energy price changes using data across European regions. First, we construct regional energy prices for seven European countries at a NUTS-2 level for the years 2000 to 2020. Our dataset encompasses Belgium, the Czech Republic, Denmark, Italy, Hungary, Finland, and Norway. Based on the EU Labor Force Survey (EU-LFS) we construct regional employment indicators by gender, and break this further down by economic activity, commuting and migration patterns as well as other sources of heterogeneity. In order to obtain exogenous variation in regional energy prices, we utilize a shift-share instrumental variable approach, which exploits the pre-sample variation in the industry composition across regions, in the resource mix of industries in their energy production and exogenous changes in the prices of different fossil fuels in a given country over time.

Our preliminary findings can be summarized as follows. First, there is a negative effect of climate policy on regional employment overall. Second, these negative employment effects are largely driven by the decline in female employment. The estimated employment effect for females is almost three times in magnitude of that for males. Third, the estimated relative employment loss in manufacturing is three times in magnitude of the economy overall. Fourth, according to our estimations, a regional energy price shock is associated with an increase in commuting for both males and females. Lastly, for hours worked, however, we find evidence for a decrease for males only. These findings might bear important implications with respect to EU policies.

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