Digitization and Unemployment

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There is a fundamental contradiction in economic progress, as technological advances on the one hand destroy jobs, and on the other hand generate new jobs. This age-old socio-economic question – whether technological change leads to gross employment gains or losses – received new impetus with digitalization. Frey and Osborne's (2013) well-known results are that 47 percent of jobs in the US exhibit a high risk of being automatized in the next 20 years. If this projection is even remotely realistic, then labor markets and economic policy face an enormous adaptation challenge, if the economic and social costs of mass unemployment are to be avoided. For Austria, Arntz et al. (2016) identify 12 percent of jobs in Austria as highly threatened by digitalization, albeit using a different method.

This contribution investigates whether digitalization is already linked to unemployment in Austria today and, if so, to tease out whether this effect is likely to rise over time. To do so, we combine industry- and occupation-level automatization risk with individual-level data to estimate the relationship between digitization and unemployment. Our goal is on the one hand, to provide a map of socio-economic effects of digitization, and on the other hand, to provide a basis for economic policy to mitigate the effects of this contradictory feature of progress through labor market and industrial policy.