PUBLIC INVESTMENT BOOSTS EMPLOYMENT WHEN THE ECONOMY IS WEAK: Evidence from German government schemes to promote renewable energy

Regions with high unemployment benefit more from local public investment activities than regions with low unemployment, though all regions benefit. This is the main finding of research by Lukas Buchheim, Martin Watzinger and Matthias Wilhelm, to be presented at the annual congress of the European Economic Association in Geneva in August 2016.

Their study focuses on Germany, where following the introduction of subsidies for investment in renewable energy, €60 billion went into the installation of photovoltaic systems between 2003 and 2012. Investment peaked at 0.6% of GDP. The study supports the hypothesis that public spending is particularly effective in stimulating the economy when resources are idle: at the county level, the research shows that a €120,000 increase in investments in photovoltaic installations caused an increase in employment by one job for one year.

The findings indicate that public investments are particularly worthwhile in places where unemployment is usually high. The employment gains are at least twice as large in counties with structurally high unemployment compared with counties with structurally low unemployment. By contrast, changes in unemployment within a county over time seem to have little impact on the effectiveness of investments in creating jobs.

The authors comment: ‘Investments may be a particularly effective stimulus tool in regions with high and persistent unemployment. Targeting the right regions at the right time is essential for cost-effective policy design.’

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Is it possible for governments to spur short-run growth via public investments? In the wake of the recent crises and slow recoveries, this question has received renewed interest. In particular, it has been argued that public investments are particularly effective in boosting the economy during recessions, because they put idle resources to work and are less likely to crowd out private economic activity.

Testing empirically whether this is actually the case is difficult. One challenge is that regions with poor economic conditions potentially receive higher public spending, making it hard to disentangle the effects of economic conditions and public spending on employment.

Another challenge is that public spending programmes in recessions typically differ from the ones in expansions, so that it is unclear whether differences in employment gains are attributable to distinct spending programmes or distinct economic conditions.

The researchers overcome both challenges by studying the labour market consequences of the German renewable energy act, which encourages investments in rooftop photovoltaic systems. These investments exhibit quasi-experimental variation across German counties, as their productivity is linked to solar radiation and rooftop potential, which are both unrelated to local economic conditions. In addition, the act provides a laboratory to study whether distinct economic conditions lead to differences in employment gains, as the act has remained unchanged since 2004.
From this quasi-experiment, the study draws two main conclusions:

First, investments are a viable tool to create employment, with €120,000 needed to create one job lasting for one year. While these costs per job are seemingly high, they can be reconciled with the much lower costs per job found for the German stimulus investment programme by Buchheim and Watzinger (2016) when noting that only 30% of the total costs of photovoltaic investments accrue locally, with the remaining 70% being spent on parts manufactured elsewhere.

Second, investments are at least twice as effective in creating jobs in counties with high unemployment compared with counties with low unemployment. This effect is less pronounced when comparing times of high and low unemployment within the same county.

The study’s implication for policy design is that investments may be a particularly effective stimulus tool in regions with high and persistent unemployment. Hence, targeting the right regions at the right time is essential for cost-effective policy design.

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