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The Impact of Aggregate Fluctuations Across the UK Income Distribution

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Macroeconomic policies work in part by affecting the distribution of resources across individuals/households. In order to better understand the transmission channels of macroeconomic policies such as monetary policy it is therefore important for policymakers to understand how aggregate fluctuations in economic activity impact across the distribution of individuals/households. Therefore, in this research paper we explore how aggregate fluctuations in economic activity affect earnings and employment across the income distribution in the UK, and how margins of adjustment differ across the income distribution.

What we do

We use data from the UK Labour Force Survey (LFS, 1997-2019) to measure the effect of fluctuations in GDP on real earnings, hours worked and the probability of labour market transitions e.g. employment to unemployment transitions. The LFS allows us to follow individuals for 5 quarters and we leverage this to estimate the effect of changes in GDP over that period by regressing changes in individuals' pay, hours and labour market status over those 5 quarters on changes in real GDP over the same 5 quarters. Using the estimates from these regressions we are then able to approximately decompose changes in earnings across the income distribution by income decile, into contributions from hourly wages, hours worked (intensive margin) and changes in employment (extensive margin).

What we find

We find that temporary fluctuations in GDP have economically significant but heterogeneous effects on real pay across the income distribution. While on average real pay responds by about 0.7pp to a 1 percent movement in GDP, we find the largest effects are at the very bottom of the income distribution (first decile, 1.2pp) and the smallest effects are in the upper middle of the distribution (eighth decile, 0.4pp). The reasons for changes in pay

also differ across the income distribution. Those in the bottom half of the income distribution largely experience adjustment through changes to their working hours, and most of that change is accounted for by changes to the likelihood of them becoming unemployed. Those in the upper middle and top of the distribution see adjustment to their pay mainly through changes to their hourly wage. We also find that the response of the job switching probability to movements in GDP is greater for those in the bottom half of the income distribution than those in the top half.

The fact that those in the bottom half of the income distribution are more likely to move into and out of employment is also true on average i.e. unconditional on any temporary shocks. An important difference that we uncover is the margin of adjustment. In general, most movements from employment to non-employment are due to transitions into inactivity. However conditional on a shock to GDP, it is the unemployment margin that dominates, not the inactivity margin, which is estimated to be insignificant in our analysis.

Finally, in further analysis we estimate similar results for GDP fluctuations induced specifically by monetary policy shocks as opposed to general GDP fluctuations in GDP. While of interest in of itself, this largely serves as a robustness test on our interpretation of our main results as capturing the effect of business cycle fluctuations.

Policy Implications

This work improves the evidence base for how fluctuations in GDP impact earnings and employment across the income distribution in the UK. These facts are relevant information for the designers and modellers of macroeconomic policy in the UK. For example, the facts that we document can be used to calibrate economic models of UK monetary policy transmission that can decompose and monitor the monetary transmission mechanism.