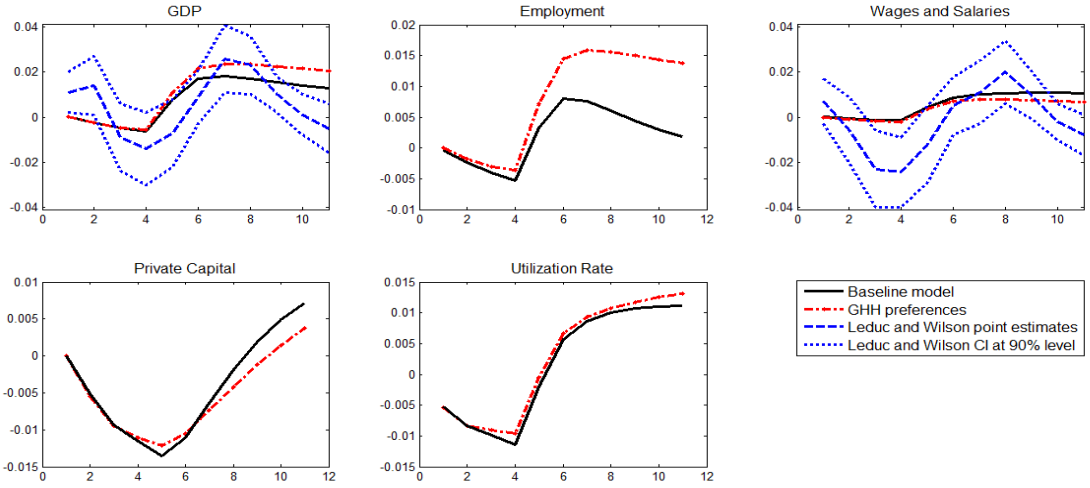
4. Do Wealth Effects on Labor Supply Matter for the Quantitative Results?

A natural question that arises in the quantitative analysis concerns the relevance of wealth effects on labor supply. We could plausibly argue that the variable capital utilization can solely explain the empirical evidence. Actually, within a divisible labor supply framework, preferences with and without wealth effects generate the same slowdown in economic activity in the short run.

Figure 7 – Responses to a 1 percent shock to outside transfers: GHH Preferences



In Figure 7, we present the theoretical responses of the same previous model, considering preferences allowed for wealth effects (preferences in the baseline model) as well as those developed in Greenwood, Hercowitz and Hoffman (1998) (GHH preferences, henceforth). However, in the analysis, hours worked vary only in the intensive margin.[17] Thus, we do not report the Leduc and Wilson (2012) estimated responses for employment, since theoretical and

[17] GHH preferences within an indivisible labor supply framework fully flatten the response of wages to shocks. In fact, within this framework, the marginal rate of substitution between consumption and labor is $U_l(c_t, l_t)/U_c(c_t, l_t) = \theta = F_l(k_t, l_t, K_t^G) = w_t$. Thus, wages are thoroughly constant and equal to θ. Therefore, the extensive margin of hours worked absorbs the entire rise in productivity of private inputs once public capital becomes productive, leading to starkly large labor responses in the medium to long run. In fact, we could not calibrate the model in order to imply a steady state probability of working of 0.70.

empirical dynamics are conceptually different. We follow the baseline calibration, except to adjustment costs in investment, ν, set to be 0.[18]

As can be seen in Figure 7, both types of preferences generate the same short run downturn in output, though GHH preferences imply higher peaks in the long run. The same pattern is observed for the employment response. Thus, short run dynamics can be generated with both types of preferences, although the implications for longer horizons may be remarkably different. In fact, in the case of GHH preferences labor supply depends only on wages and, thus, is not affected by the level of consumption. Therefore, the increase in public capital stock (and, thus, in marginal productivity of inputs) is absorbed by hours worked in a greater manner in comparison to preferences allowed for wealth effects.

[18] In the analysis, we assume a GHH utility function in the form $U(c_t, l_t) = log\left(c_t - (\theta/\xi)l_t^{\xi}\right)$, and choose ξ = 1.5, to imply a Frisch labor elasticity of 2. The utility function that allow for wealth effects is the same adopted in the baseline model, but we also set ξ = 1.5 rather than 1 (the latter value, as previously noted, implies an infinite Frisch labor elasticity).