

## [Optimal Monetary Policy in the Presence of Human Capital Depreciation during Unemployment](#)

CFM-DP2014-15

Lien Laureys<sup>1,2</sup>

<sup>1</sup>Bank of England; and <sup>2</sup>Centre for Macroeconomics

Analysing the trade-off that monetary policymakers face between unemployment and inflation stabilization has been a topic of interest in the literature for several years. But the literature has focused primarily on an environment where workers are homogenous, leaving it an open question whether this trade-off is altered once worker heterogeneity is taken into account.

This paper studies an environment where human capital depreciation during unemployment generates heterogeneity among ex-ante identical workers. This source of heterogeneity seems particularly relevant because when workers are exposed to human capital depreciation during periods of unemployment, job creation affects the unemployment pool's composition in terms of skills, and hence the economy's production potential. If aggregate shocks induce changes in the skill composition of the unemployment pool which are not desirable from a social point of view, it might be optimal to influence job creation by allowing for more or less inflation relative to an environment where human capital depreciation is not taken into account. Put differently, the presence of skill erosion during unemployment might affect the trade-off between unemployment and inflation stabilization.

Introducing human capital depreciation during unemployment into an otherwise standard New Keynesian model with search frictions in the labour market leads to the finding that the flexible-price allocation is no longer constrained-efficient even when the standard Hosios (1990) condition holds. This is because it generates a composition externality in job creation: firms ignore how their hiring decisions affect the extent to which the unemployed workers' skills erode, and hence the output that can be produced by new matches. Consequently, it might be optimal for monetary policy to deviate from strict inflation targeting.

When I analyse a calibrated model quantitatively, I find that even though optimal price inflation is no longer zero under the Ramsey policy plan, deviations from it are almost negligible. Consequently, the prescription for the conduct of monetary policy does not change much when it is taken into account that the unemployed are exposed to human capital depreciation: optimal monetary policy stays close to strict inflation targeting.