HKUST ECON Seminar

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Production Function Estimation Using Subjective Expectations Data

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Abstract:

Standard methods for estimating production functions in the Olley and Pakes (1996) tradition require assumptions on input choices. We introduce a new method that exploits (increasingly available) data on a firm's expectations of its future output and inputs that allows us to obtain consistent production function parameter estimates while relaxing these input demand assumptions. In contrast to dynamic panel methods, our proposed estimator can be implemented on very short panels (including a single cross-section), and Monte Carlo simulations show it outperforms alternative estimators when firms' material input choices are subject to optimization error. Implementing a range of production function estimators on UK data, we find our proposed estimator yields results that are either similar to or more credible than commonly-used alternatives. These differences are larger in industries where material inputs appear harder to optimize. We show that TFP implied by our proposed estimator is more strongly associated with future jobs growth than existing methods, suggesting that failing to adequately account for input endogeneity may underestimate the degree of dynamic reallocation in the economy.