

# **Contract work and Endogenous Productivity in the Indian Manufacturing Sector**

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## **Abstract**

Notwithstanding the labor cost savings and flexibility, contract work arrangements (or temporary agency work) potentially affect worker morale due to visible work-place wage inequality (relative to regular/permanent workers) and prevent the accumulation of firm-specific human capital, adversely affecting total factor productivity. In exploring this little understood facet of contract work, my paper presents the first set of estimates of its effects on firm productivity in any middle income country. This paper focuses on the Indian case where contract work is gaining importance, evidently from the increase in its share of work from 13% to 33% between 1998-99 and 2010-11 in the manufacturing sector. Extending the Olley and Pakes (1996) class of estimators, my model relaxes their assumption of exogenous productivity evolution and allows productivity to grow endogenously based on firm's input choices. I present the Generalized Method of Moments estimates of the production function and productivity elasticities with respect to contract work, separately for six broad industries namely, (i)Textiles, (ii)Food, (iii)Motor Vehicle, (iv)Basic metals, (v)Rubber, Wood & paper, and (vi) Chemicals, using a 13-year panel dataset of formal sector manufacturing firms. Generalized Method of Moments estimates indicate that average productivity elasticities with respect to current contract work (contemporaneous elasticity) is positive, and average productivity elasticity with respect to lagged contract work (dynamic elasticity) is negative. Further, dynamic elasticity increases with lagged share of contract mandays up to a threshold, but decreases thereafter, indicating potential adverse effects in using excessive contract workers. Such productivity losses explain why despite enormous savings achievable in employing contract workers, firms' nevertheless choose to employ a core group of regular workers who contribute to a firm's pool of knowledge and human capital. Results lend themselves to the ongoing regulatory discourse on hiring practices and employment protection in developing countries highlighting subtle productivity repercussions of the proliferating institution of contract work.

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