

# Wage inequality and induced innovation in a classical-Marxian growth model

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**Abstract** The present paper works out a classical-Marxian growth model with an endogenous direction of technical change and a heterogeneous labour force, made up of high-skilled and low-skilled workers. It draws on the Kaleckian mark-up pricing to link wage inequality to the relative unit labour cost at a firm level; on growth cycle models *à la* Goodwin to formalize the dynamic interaction between labour market and distributive shares of income; on the induced innovation literature to link the bias of technical change to the firm's choice of the optimal combination of factor-augmenting technologies. We assume that economic growth is constrained by the growth rate of the high-skilled effective labour supply, whereas the low-skilled labour supply is perfectly elastic. Thus, we develop a three-dimensional system of differential equations for the output-capital ratio, the relative unit labour cost and the employment rate of the high-skilled workers, and investigate the stability and the main properties of the steady-state equilibrium. We find that, in contrast to the neoclassical literature on skill-biased technical change, the institutional framework governing the conflict over income distribution is the ultimate determinant of both wage inequality and the direction of technical change. A decline in low-skilled workers' bargaining strength or a rise in product market concentration lead to both an increase in wage inequality and a bias of technical change favouring high-skilled over low-skilled labour productivity growth. As opposed to the Goodwin model with induced technical change and homogeneous labour force, labour market institutions thus affect steady-state income distribution, capital accumulation and labour productivity growth, and no necessary trade-off arises between labour market regulation and employment. Finally, if the steady-state value of wage inequality exceeds a critical value, an exogenous increase in the mark-up or in the high-skilled workers' bargaining power allow both capitalists and high-skilled workers to increase their income shares at the expense of the low-skilled workers.

**Keywords** Wage inequality, growth, distribution, endogenous technical change

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