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Unemployment and income distribution in the medium-run growth model

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Abstract. By extending the Solow growth model so as to include the unemployment rate as an endogenous variable, I construct a medium-run growth model and explore evolutions of major macroeconomic variables in the medium-run. Instead of assuming that the real wage rate is perfectly flexible to assure always full-employment in the labor market, I introduce a wage-setting equation a la Blanchard (Brooking Pap. Econ. Act. 2:89-158, 1997) that assumes a negative relation between the level of real wage and the unemployment rate. An important characteristic of this model is that it includes unemployment even in the steady growth equilibrium. This model can analyze the theoretical relationships among the main macroeconomic variables including the rate of growth, the rate of unemployment, and the labor share of income in the medium-run. Applying this model to the Japanese economy, we attempt to explain the trend of major macroeconomic variables during the last 50 years; as the growth rate of real GDP tended to decline over last 50 years, the unemployment rate, the capital coefficient and the labor share had tendencies to rise over time. The trends of these macroeconomic variables are shown to be explained consistently with our model under certain conditions on parameters of the model.

Key words: capital coefficient, labor share, medium-run growth model, the rate of unemployment