Appendix E

Kalecki's Theory of Profits

This section sets out briefly Kalecki's theory of the determinants of profits, being an important ingredient of Minsky's financial instability hypothesis which is discussed in sections 4.5.5 and 5.5.5.[1]

Kalecki's simplest closed economy model, abstracting from government sector activities, consists of two production sectors, where one sector produces consumption goods (subscript C), and the other one investment goods (subscipt I). Aggregate real income is distributed among workers who receive wages, and capitalists who earn profits, where the neoclassical savings hypothesis is assumed to be valid, stating that there are no savings out of wages, and that there is no consumption out of profits. That is, workers spend all their wage income on consumption goods, and capital owners spend all their profit income on investment. Accordingly, the nominal amount of consumption expenditures C^n is equal to the sum of wage income in the consumption goods sector and wage income in the investment goods sector, i.e. formally, it holds that

$$C^n = P_C Y_C = w_C N_C + w_I N_I, \tag{E.1}$$

where P_C denotes the price of consumption goods, Y_C real output of consumption goods, w_C wages per unit of employment in the consumption goods sector, w_I wages per unit of employment in the investment goods sector, N_C the volume of employment in the consumption goods sector, and N_I the volume of employment in the investment goods sector.

Nominal profits in the consumption goods sector PR_C are determined by nominal sales revenues of consumption goods $P_C Y_C$ less wages in the consumption goods sector $w_C N_C$, i.e. formally it holds that

$$PR_C = P_C Y_C - w_C N_C. \tag{E.2}$$

Inserting equation E.1 in equation E.2, and solving for PR_C yields

$$PR_C = w_I N_I, \tag{E.3}$$

stating that profits in the consumption goods sector are determined by consumption demand of workers being employed in the investment goods sector.

[1]For references to this section, see Kalecki (1971), chapter 7, pp. 78-92, and Minsky (1982b), chapter 4, pp. 71-89.

Nominal profits in the investment goods sector PR_I are determined by nominal sales of investment goods $I^n = P_I Y_I$, where P_I and Y_I denote the price and real output of investment goods, less wages in the investment goods sector $w_I N_I$. Formally, nominal profits in the investment goods sector are given by

$$PR_I = P_I Y_I - w_I N_I. \tag{E.4}$$

Total nominal profits PR in the economy are determined by the sum of profits in the consumption goods sector and profits in the investment goods sector. Formally, total nominal profits are given as

$$PR = PR_C + PR_I. \tag{E.5}$$

The determinants of total profits are derived by inserting equations E.3 and E.4 into equation E.5, which yields

$$PR = P_I Y_I = I^n, \tag{E.6}$$

stating that the total level of nominal profits is determined by the nominal amount of investment. Consequently, a rise/fall in investment expenditures causes a rise/fall in total profits.

In the open economy version of the Kalecki model, which additionally considers government expenditures and taxation, as well as consumption out of profits and savings out of wages, the nominal amount of consumption C^n is given by

$$C^n = P_C Y_C = (1 - s')(w_C N_C + w_I N_I) + c' PR + G - T_W + Ex - Im, \tag{E.7}$$

that is, by consumption out of wages less savings out of wages $(1 - s')(w_C N_C + w_I N_I)$, where s' denotes the marginal propensity of saving out of wages, plus consumption out of total nominal profits net of taxes $c' PR$, where c' denotes the marginal propensity of consumption out of profits, plus government expenditures G, less taxes on total wage income T_W, plus exports Ex, less imports Im.

Nominal profits net of taxes in the consumption goods sector PR_C are formally determined by

$$PR_C = P_C Y_C - w_C N_C - T_{PR,C}, \tag{E.8}$$

i.e. by nominal earnings $P_C Y_C$, less labour costs $w_C N_C$, less taxes on profits in the consumption goods sector $T_{PR,C}$. Nominal profits net of taxes in the investment goods sector PR_I are formally given by

$$PR_I = P_I Y_I - w_I N_I - T_{PR,I}, \tag{E.9}$$

that is, by nominal earnings $P_I Y_I$, less labour costs $w_I N_I$, less taxes on profits in the investment goods sector $T_{PR,I}$.

Total nominal profits net of taxes PR are determined firstly, by inserting equation E.7 into equation E.8, resulting in a modified version of nominal profits net of taxes in the consumption goods sector, reading as

$$PR_C = w_I N_I - s' w(N_C + N_I) + c' PR + G - T_W - T_{PR,C} + Ex - Im, \tag{E.10}$$

and secondly, by summing up equations E.9 and E.10, which yields

$$PR = (P_I Y_I + c' PR - s'(w_C N_C + w_I N_I) + (G - T_W - T_{PR,C} - T_{PR,I}) + (Ex - Im)), \tag{E.11}$$

where $(G-T_W-T_{PR,C}-T_{PR,I})$ denotes the government budget deficit. Accordingly, profits increase/decrease if nominal investment $I^n = P_I Y_I$ increases/decreases, if consumption out of profits rises/falls, if savings out of wages decreases/increases, if there is a rise/fall in the government budget deficit, and if there is a rise/fall in net exports.