Appendix: regression equations

Statistical details of equations used in the text are provided here. Please note that these are not provided to show that these equations provide a good statistical description of the data. Most of them fail to meet conventional criteria for goodness of fit. The criteria for choosing these equations included the following: that they are appropriately simple; that they use familiar and accessible data; and that they approximate (in a simplified form, and subject to the other criteria) published results. For example, the consumption and trade equations, though they fail many standard tests, have coefficients broadly similar to certain, more 'respectable' published equations. Their purpose is to help students who would otherwise ignore such work, to read and understand what is going on in more complicated studies. Except for chapter 6, discussed below, data sources are as described in the chapters concerned. SP denotes sample period, DW the Durbin Watson statistic and parentheses *t* ratios.

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$C = 3.65 + 0.89Y$ $\quad R^2 = 0.988 \quad DW = 0.23$

(1.16) (53.6) $\quad F = 2874.2 \quad SP = 1953\text{-}89$

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$c = 0.19 + 0.95y$ $\quad R^2 = 0.991 \quad DW = 0.26$

(2.46) (64.1) $\quad F = 411.2 \quad SP = 1953\text{-}89$

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$c_t = 0.27 + 0.94y^P_t$ $\quad R^2 = 0.983 \quad DW = 0.36$

(2.60) (46.2) $\quad F = 2138.8 \quad SP = 1953\text{-}89$

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$c_t = 0.26y_t + 0.73c_{t-1} + 0.05$ $\quad R^2 = 0.995 \quad DW = 0.81$

(1.76) (4.63) (0.78) $\quad F = 3266.8 \quad SP = 1953\text{-}89$

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$c_t = 1.006c_{t-1} + \varepsilon_t$ $\quad R^2 = 0.994 \quad DW = 1.21$

(1525.1) $\quad SP = 1953\text{-}89$

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$\Delta c_t = -0.001 + 0.63\Delta y_t + 0.19s_{t-1} - 0.13\pi$ $\quad R^2 = 0.838 \quad DW = 1.59$

(0.15) (8.61) (1.81) (2.72) $\quad F = 36.2 \quad SP = 1956\text{-}80$

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$\Delta c_t = -0.009 + 0.73\Delta y_t + 0.19s_{t-1} - 0.09\pi + 0.018RHP - 0.51\sigma.$

(1.10) (6.20) (2.14) (1.29) (2.14) (1.74)

$R^2 = 0.833 \quad DW = 1.66$

$F = 28.1 \quad SP = 1956\text{-}89$

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$\Delta GK_t = 0.30Y_{t-1} - 0.076GK_{t-1}$ $\quad R^2 = 0.906 \quad DW = 0.88$

(21.5) (17.0) $\quad SP = 1961\text{-}88$

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$\Delta S_t = 0.22Y_t - 0.36S_{t-1}$ $\quad R^2 = 0.536 \quad DW = 1.19$

(5.48) (5.61) $\quad SP = 1961\text{-}88$

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$\Delta GK_t = 0.31Y_{t-1} - 0.082GK_{t-1}.$ $R^2 = 0.395$ DW=0.76
(8.33) (6.14) SP = 1961-79

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$X = 0.052X^w_{t-1} - 0.285RULC_{t-1} + 40.2$ $R^2 = 0.993$ DW=2.47
(48.6) (6.39) (11.7) SP = 1964-88

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$M = 0.338TFE_{t-1} + 0.392RULC_{t-2} - 0.549XSC_t - 78.7$
(28.0) (4.86) (4.37) (11.1)
$R^2 = 0.982$ DW=1.33
SP = 1964-88

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$M_t = 0.246TFE_{t-1} + 0.00103(TFE_{t-1}.RULC_{t-2}) - 0.568XSC_t - 43.9$
(11.8) (5.59) (4.90) (11.5)
$R^2 = 0.985$ DW=1.51
SP = 1964-88

Chapter 6

The variables used are defined as follows: $t_0 = 0$ in 1960, rising by 1 each year thereafter; $t_1 = 0$ till 1973, rising by 1 each year thereafter; $t_0 = 0$ till 1979, rising by 1 each year thereafter; $t_0 = 0$ till 1980, rising by 1 each year thereafter. TFP = log(Y/L) - (1/3)log(K/L). The sample period is 1961-89. Y/L are the index numbers (1980 = 100) of output per person employed. K/L is constructed as an index (1985 = 100) from gross capital stock and indices of the employed labour force.

Figure 6.1 — Whole economy

$\log(Y/L) = 4.02 + 0.0287t - 0.0162t_1 + 0.0098t_2$ $R^2 = 0.995$ DW =1.65
(513.2) (31.2) (7.0) (3.8)

$\log TFP = 2.78 + 0.0163t - 0.0500t_1 + 1.0146t_2$ $R^2 = 0.981$ DW =1.49
(330.1) (16.5) (6.0) (5.36)

Figure 6.1 — Manufacturing

$\log(Y/L) = 3.82 + 0.0376t - 0.0326t_1 + 0.0388t_2$ $R^2 = 0.990$ DW =1.28
(255.0) (21.4) (7.36) (8.00)

$\log TFP = 2.67 + 0.0239t - 0.0356t_1 + 0.0429t_2$ $R^2 = 0.950$ DW =0.99
(140.8) (10.7) (6.35) (7.00)

Figure 6.3 and Table 6.2

$\log(Y/L) = 3.83 + 0.0366t - 0.0234t_1 + 0.0508t_2 + 0.879t_3$ $R^2 = 0.995$ DW =1. 74
(351.4) (28.5) (6.3) (2.7) (4.9)

$\log TFP = 2.67 + 0.0225t - 0.0223t_1 - 0.0865t_2 + 0.126t_3$ $R^2 = 0.982$ DW =1.85
(229.4) (16.3) (5.6) (4.36) (6.5)

Figure 6.4 (estimate c)

$TFP = 0.8492 + 0.0161t - 0.0143t_1 + 0.0132t_2$ $R^2 = 0.980$ DW =1.57

where TFP = log(Y)-(1/3)log(K)-(2/3)log(L), with Y being real GDP at factor cost (£billion); K being the gross capital stock (£billion) and L the employed labour force (million).