Advanced Macroeconomics

20.10.2014   Christian Groth

Errata to course material[1]

Symbol glossary: "l." means "line"; "f.b." means "from below"; "eq." means "equation"; "q" means question. In the third column, in square brackets, occasionally appears a remark.

page	reads	should read (or my comment)
Elmendorf & M.		
1628-29		[see comment below]
Mishkin		
4, middle	$\Rightarrow Y \uparrow$	$\Rightarrow Y \downarrow$
King & Rebelo		
945, eq. (3.8)	$u(c, L) =$	$u(C, L) =$
955, l. 2 f.b.	$N \frac{dN_t}{N} + L \frac{dL_t}{L} = 1.$	$N \frac{dN_t}{N} + L \frac{dL_t}{L} = 0.$
955, n. 33	about $\hat{N}_t = 0$ is $\hat{N}_t.$	about $\hat{N}_t = 0$ is $1 + \hat{N}_t.$

Comment on Elmendorf and Mankiw (E&M), p. 1628-29

As I see it, the national income accounting here is a mess. Or to say it in a more polite way: the authors' national accounting is only valid if net factor income from abroad is vanishing and there is no government debt.

First, on p. 1628 the symbol Y is used in two different meanings, as gross national income and as GDP. Using Y to denote the latter (as usual), we have the output-expenditure identity

$$Y = C + I + G + NX. \tag{1}$$

With Q denoting gross national income, we have

$$Q = Y + rA^f + wL^f, \tag{2}$$

where rA^f is return on net foreign assets and wL^f is net labor income from abroad. Thus, using Y to denote both GDP and gross national income can only be valid if net factor income from abroad, $rA^f + wL^f$, is vanishing.

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[1]Errata to the lecture notes are listed at the course website.

Secondly, with rB representing interest service on the government debt, we may split Q into government income, $T - rB$, and private disposable gross income, Y^p, and the latter into private consumption and private gross saving, S^p:[2]

$$Q = Y^p + T - rB = C + S^p + T - rB. \tag{3}$$

Isolating S^p gives

$$S^p = Q - C - T + rB, \tag{4}$$

But in connection with their first equation on p. 1628 E&M speak of "private saving" as $Q - C - T$. So they implicitly assume there is no government debt − which is surprising in view of government debt being the topic of the article.

Substituting (2) and (1) into (4) gives

$$
\begin{aligned}
S^p &= Y + rA^f + wL^f + rB - T - C \\
&= I + G + rB - T + NX + rA^f + wL^f.
\end{aligned}
$$

If all of G is public consumption, $S^g = T - G - rB$, where rB is interest service on government debt; so *aggregate gross saving* is

$$S = S^p + S^g = I + NX + rA^f + wL^f. \tag{5}$$

That is, aggregate gross saving must equal the sum of gross investment, net exports, and net factor income from abroad.

Denoting the current account surplus CAS, we have

$$CAS = S - I = NX + rA^f + wL^f = NFI, \tag{6}$$

where NFI is net foreign investment. The latter is also equal to the increase per time unit in net foreign assets or what is in Lecture Notes denoted $\dot{A}^f$.

Substituting (6) into (5) gives

$$S = I + NFI, \tag{7}$$

saying that aggregate saving is used for investment at home and abroad.

Comparing (5), (6), and (7) with the three equations on p. 1629 in E&M, we see that E&M also here implicitly assume that net factor income from abroad = 0.

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[2] "Gross" because we have not subtracted capital depreciation. E&M denote private gross saving S, but this symbol usually stands for aggregate gross saving (as in the lecture notes for this course). Therefore, we instead use S^p for private gross saving.