PROF. DR J. TINBERGEN

THE HAGUE, July 27, 1954
Sijzenlaan 41

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Professor Ferdinando di Fenizio,
Via Farneti 8,
Milano

Dear Professor di Fenizio,

After the last letter of Mrs Dr Chiesa everything is clear now about the set of proofs and here are my answers to the "points of doubt".

1. I think it is correct to make the circumscription of the variables p^W, ξ_o on page 26 equal to the one given in table II 1; however, the circumscription of p^W is not export prices but prices competing with our exports.

2. The first question put here is a misunderstanding since not $\tau = 0$ but only $\bar{\tau}$. Everything is correct as it now stands. Also the second question therefore is superfluous. As to the third question, also here it is not necessary to make any changes since the argument that all prices are equal to 1 in the base period does not automatically apply to p^x. No changes are necessary therefore.

3. Also here I do not think that any changes are necessary; the explanation is that e^W, p^W, p^m are varying data, i.e. data who change their values. If it is said that the data are varyingable the last word has now to be understood as an adjective, not as a subjective.

4. Also this question, I think, rests on a misunderstanding since (27) is not an equation in the proper sense of the word but an identity indicating the numerical value of ξ^3.

In response to the note at the bottom of the page on points of doubt I am enclosing a further explanation of equation (2 I'). I am sending the proofs under separate cover.

Yours very sincerely,

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Sijzenlaan 44

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Deduction of equation (2 I'):

Equation (1), for $\xi_o = 0$:
$$\begin{aligned} x &= (1-\sigma)\, Z^R + L^R \\ &= (1-\sigma)(Y-L-\bar{Z}p^x) + L-\bar{L}p^x \end{aligned}$$

Now $Y = X+E-M = x+\bar{x}p+e+\bar{e}p-m-\bar{m}p^m = x+e+(\bar{x}+\bar{e})p-m-\bar{m}p^m =$
$$= (1+\mu)y + (\bar{x}+\bar{e})p - \mu y - \bar{m}\varepsilon^m (p-p^m) - \bar{m}p^m$$
and $L = \bar{L}\,(1'+y)$, whereas $p^x = p+\tau$; using these transformations we find for x:
$$\begin{aligned} x = &(1-\sigma)\{(1+\mu)y + (\bar{x}+\bar{e})p - \mu y - \bar{m}\varepsilon^m(p-p^m)-\bar{m}p^m\} - \\ &- \bar{L}\,(1'+y)(1-\sigma) - \bar{Z}\,(p+\tau)(1-\sigma) + \bar{L}\,(1'+y) - \bar{L}\,(p+\tau) \end{aligned}$$
Arranging the terms we get:
$$\begin{aligned} x = &\{1-\sigma-\bar{L}\,(1-\sigma) + \bar{L}\}y + \{(1-\sigma)(\bar{x}+\bar{e}-\bar{m}\varepsilon^m-\bar{Z}) - \bar{L}\}p + \\ &+\{-(1-\sigma)\,\bar{L} + \bar{L}\}1' + \{-\bar{Z}(1-\sigma) - \bar{L}\}\tau + \{(1-\sigma)(\bar{m}\varepsilon^m-\bar{m})\}p^m \end{aligned}$$
or $$\begin{aligned} x = &(1-\sigma+\bar{L}\sigma)y + \{(1-\sigma)(\bar{m}+\bar{L}-\mu\varepsilon^m) - \bar{L}\}\, p + \sigma\bar{L}1' + \{-1+\sigma-\sigma\bar{L}\}\tau \\ &+ \mu(1-\sigma)(\varepsilon^m-1)\, p^m. \end{aligned}$$
In this latter transformation we have used the following identities: $\bar{x}+\bar{e} = \bar{m}+\bar{L}+\bar{Z}$ being the definition of gross national income; $\bar{m}=\mu$ and $\bar{Z}+\bar{L}=1$.