

Responses to referee report 1

Chung-hui Lai (2013). (In)Determinacy, Bargaining, and R&D Policies in an Economy with Endogenous Technological Change. *Economics Discussion Papers, No 2013-14, Kiel Institute for the World Economy*.
<http://www.economics-ejournal.org/economics/discussionpapers/2013-14>

Thank you for your insightful comments and suggestions. I will address them in the revision. Here I respond to some issues at first.

(1)

- (a) The English of this paper's introduction, the conclusion and some sentences you reminded would be edited by a native speaker to improve the grammar.
- (b) Thank you for your suggestion. I shorten the presentation: deleted the part of presentation in "the overall level of consumption C", and just remain the part of presentation of "the overall level production Y" in revision.
- (c) Thank you for your valuable reminding. I modified the presentation of p_A . Following your suggestion, I corrected the " p_A is the value of the blueprint" in revision. And I put the footnote 6 into the main text in revised version. This will be more clearly to present the standard the R&D sector.
- (d) Thank you very much for your suggestion. I rewrite the R&D sector in section 3.4 in revision, or [see following section 3.4](#):

3.4 R&D

In R&D sector, by substituting the production function, Eq. (1), into Eq. (2) and due to the property of perfect competition in the R&D sector ($\pi_A = 0$), the blueprint cost or value is as follows

$$p_A = \frac{v(1-s)w}{n} \quad (27)$$

Eq. (27) indicates that the value of the blueprint is equal to its cost. This is different from the standard free entry condition which is presented in the canonical Romer model. The government's subsidy policy will decrease the cost of the innovation. And the government R&D will also decrease the cost of the innovation. On the other hand, the private firms are engaged in R&D will increase the value of the innovation.

Anyone can have free entry into the business of being an inventor as long as the R&D cost secures the net present value of the profit in intermediate goods, that is

$$p_A = \int_t^\infty \pi(\omega) e^{-\bar{r}(t,\omega)(\omega-t)} d\omega \quad (a)$$

where $\bar{r}(t, \omega) \equiv [1/(\omega-t)] \cdot \int_t^\omega r(v) dv$ is the average interest rate between t and ω . Differentiating the free entry condition in Eq. (a) with respect to time, we obtain

$$r = \frac{\pi}{p_A} + \frac{\dot{p}_A}{p_A} \quad (28)$$

Eq. (28) is a non-arbitrage condition which states that the rate of return on bonds, r , equals the rate of return to investing in R&D. The R&D rate of return equals the profit rate, π/p_A , plus the rate of capital gain or loss, \dot{p}_A/p_A .

On the other hand, I think some misunderstanding exists. I set up the bargaining process between the final goods and the intermediate goods firms, not set it in R&D sector. Therefore, the bargaining process will not modify the standard free entry condition present in the canonical Romer model. But the government's subsidy policy and the government R&D indeed modify the standard free entry condition present in the canonical Romer model. I have to emphasize the key point in revised version. [Or see following sentence:](#)

$$p_A = \frac{v(1-s)w}{n} \quad (27)$$

Eq. (27) indicates that the value of the blueprint is equal to its cost. This is different from the standard free entry condition which is presented in the canonical Romer model. The government's subsidy policy will decrease the cost of the innovation. And the government R&D will also decrease the cost of the innovation. On the other hand, the private firms are engaged in R&D will increase the value of the innovation.

(2) I would like to further clarify the main contribution, main point and motivation of the paper. And I would like to be clearer regarding the economic intuitions pertaining to its mathematical results in revised version.

(3) I would like to rearrange the introduction in revised version to clarify the justification for the motivation of this paper in the first paragraph.

(4) Further small remarks

- Thank you for your valuable suggestion. I modified the model referred to as the “expanding-variety growth model (Romer lab-equipment model)” in revision.
- Thank you for your reminding. I simplified the introduction and deleted a lot of references which are not directly relevant for this paper in revision.