

Response to Referee's comments (1)

First of all I would like to thank you for your valuable comments and appreciating the relevance of this note. I have tried to address the points you raised in the report. Relevant changes are made in the revised draft. However, my detailed responses are listed as follows:

1. I suggest to slightly change the title to give a clearer idea of the content of the paper: Virtual distance, production....(or specify that the paper refers mainly to services or virtual trade).

R#1. I have changed the title as “Distance, Production, Virtual Trade and Growth – A Note”.

2. In page 3: “But my focus in this note is on the relationship between virtual trade and distance. This part is relatively less explored.”

I suggest explaining whether the paper contributes to the theory explaining the relationship and specify the main departure from the existent papers.

R#2. In the introduction (pp 5) of the note I have explicitly talked about how this note is different from the existing papers, and how this short note adds some value to the literature on Time Zone and Trade.

By this time it is, perhaps, clear that total volume of trade has two components: physical trade and virtual trade. Physical trade falls with distance. But my focus in this note is on the relationship between virtual trade and distance. The idea of virtual trade is essentially trade in services or trade in labor tasks that can be exported and imported back via internet. This part is relatively less explored. So in this note I strive to add some value to the existing literature which is yet to be highly researched. In doing so I attempt to relate physical distance influencing (non-) overlapping time zones between two trading partners with virtual trade. Notice that this kind of trade becomes a central issue of research only after information technology revolution. So a reduction in the cost of communication is the primary driving force for virtual trade. Hence I start with a negligible cost of communication.

The world being circular, time zones are essentially the reflection of aerial distance. Therefore, in a finer sense distance between two places are exhibited by the difference in time zones or calendar dates. And, hence, in the hindsight of time zone and trade literature there is physical distance that triggers virtual trade positively which is quite contradictory with the standard 'distance and goods' trade' arguments. Taking clue from this baseline wisdom I move forward to check how distance can impact on volume of production and trade. Then I briefly attempt to look at if such kind of trade caused by difference in time zone which in turn led by distance may induce any change in capital accumulation or output growth.

3. Section II: Same issue as before, the section starts with: Drawing from Kikuchi and Marjit (2011) I consider a Cobb-Douglas production function for service output....

By reading the section it remains unclear what is new in this paper and what is taken from Kikuchi and Marjit (2011). This needs further clarification.

R#3. Since I have just borrowed a few modeling techniques from Kikuchi and Marjit (2011), I have placed the brief idea of that paper in footnote1 (pp 6).

Kikuchi and Marjit (2011) is concerned about how growth is associated with time zone difference. They formulated a dynamic model of growth following AK structure where it has been argued how exploitation of time zone difference through communication network can lead to growth in both the trading partners simultaneously. But they did not consider the distance issue explicitly. So their paper was based on growth theory and focused on productivity concern. In this note I borrow the simple Cobb-Douglas production function that had been used in Kikuchi and Marjit (2011) and then invoke the issue of distance captured by difference in time zones. I thank the referee for asking me to provide with the brief idea of Kikuchi and Marjit (2011).

4. In section 3, footnote 3: This is done in Kikuchi (2009) but in a different structure. My question is: if this has been done before with a different structure, explain the reason why it should be better (if so) to do it as you indicate. And what was this "different Structure"? = explain it.

R#4. I agree with you. Following your concern I have explained why Kikuchi (2009) is different from this note. It is provided in the footnote 7 (pp 9).

This is done in Kikuchi (2009) but in a different structure. Kikuchi (2009) used a three country framework to analyze how internet connection translates the time zone difference into comparative advantage. So the unconnected country fails to exploit the time zone related

natural difference. Therefore internet connectivity leads to trade creation. In this paper though I indirectly hint at trade creation proposition, I do not consider a three country model that can easily be extended for. Further I attempted to go slightly beyond the time zone argument by bringing in the issue of distance to the forefront. Here internet connectivity is a necessary condition, but to extract benefit fully from internet connection the countries need to be located at a distance. To be more precise the distance consistent with non-overlapping time zone is most advantageous.

Again, the specialty of this note is explained in the Introduction as I have mentioned in R#1.

Minor remarks:

1. In page He showed that under a reasonable condition outsourcing is profitable than communication autarky;

-You mean: is "more" profitable

R#5. I have corrected this (pp 4).

2. In page 7: In this note I have constructed a model using Cobb-Douglas production function function...

You mean: "a" Cobb-Douglas production function?

R#6. I have corrected this (pp 10).

3. References: Chakrabarti, A., (2204), "

I suppose 2004?

R#7. I have corrected this (pp 12).

References

Kikuchi, T., (2009), "Time Zones as a Source of Comparative Advantage", *Review of International Economics*, 17(5), 961-968.

Kikuchi, T. and S. Marjit, (2011) "Growth with Time Zone Difference", *Economic Modelling*, 28, 637-640.