

Answer to the referee report no 2.

(1) There is an existing literature that seeks to model the real exchange rate using productivity differences and based on differences in sectoral productivity. This literature should be referenced in your paper since this is not your innovation but your application to Macedonia. For example, De Gregorio et al. (1994) and MacDonald and Ricci (2005).

**ANSWER:** This is a misunderstanding. We cite and reference a number of papers that analysed the effect of productivity on the real exchange rate in transition economies and that also surveyed the existing literature (see e.g. Halpern and Wyplosz, 1997, MacDonald and Wojcik, 2004; DeBroeck and Slok, 2006 and Égert, Lommatzsch, Lahrèche-Révil, 2006 for empirical estimations and Egert, Halpern and MacDonald, 2006 for a literature overview).

(2) The paper suggests that Balassa-Samuelson is not operating in Macedonia (i.e. “is quasi-irrelevant”?), since although productivity is related to the real exchange rates in Table 2’s estimations and Figure 5 (with the authors being a little optimistic about “eyeball econometrics” here), there is no association between productivity and relative prices on the basis of Figure 4. The authors may be right that there is no correlation between relative prices and productivity, but couldn’t the authors have tested for this statistically rather than suggesting that it looks like there is no relationship on the basis of Figure 4?

**ANSWER:** We did not test for the relationship between relative prices and various measures of productivity differentials for two reasons. First, we thought Figure 4 was quite telling about the absence of a long-run relationship between the aforementioned variables. Second, we did want to concentrate on the real exchange rate estimations. If the referee insists we could report the results in a footnote.

(3) There is evidence of high productivity in the hotel and restaurants sectors. Why is this? At present you only suggest that it is a statistical artefact and provide no reference or justification for that. This may be important since this is a sector that enters your tradable good sector at one point (prod3) and its high productivity will clearly influence your results. Also hotels and restaurant are typically considered to be part of the service sector, which is nontradable. You could provide some justification for why you consider this to be a tradable good sector beyond “some voiced the view that services are becoming increasingly tradable in nature.” This could be an important sector since most people consider it an important channel of the Balassa-Samuelson effect is from high productivity in the tradable goods sector (MacDonald, 2007, p. 75). If productivity improvements are concentrated in the nontradable goods sector, does this have implications for the Balassa-Samuelson hypothesis and consequently the real exchange rate?

**ANSWER:** We will mention the papers that argued that hotels and restaurants may be actually tradable.

The idea was to check the sensitivity of the results with regard to alternative measures of the productivity differential. The estimation results show that the results that consider hotels and restaurants as a nontradable sector are slightly more robust.

(4) Figure 4 presents data for aggregate and disaggregate inflation. Non-tradable inflation and tradable inflation have both been stronger than aggregate inflation. Given that products are either non-tradable or tradable, where is low aggregate inflation coming from? Also in Figure 4 once the high productivity sectors of hotels and restaurants are included (i.e. prod3), productivity is lower than without it (prod 1 or 2). How can this be?

**ANSWER:** Unfortunately, a mistake slipped into the graph. The series that is called now overall CPI is actually the series of tradable goods in the CPI and vice versa. We will correct this mistake in the revision.

(5) Figure 5 is particularly confusing when it comes to undefined acronyms. This may partly explain why the discussion is also unclear. When you suggest “the depreciation is substantially lower” for the corrected real exchange rate (REER\_COR?), do you mean that the real exchange rate is lower and hence there is a greater depreciation? Why is the productivity measures prod4 and prod5 only being used for comparison with the real exchange rate? Isn’t it more conventional to compare only productivity in industry and agriculture, which are typically considered as tradable? Also what is the correlation coefficient between the different measures of productivity and the real exchange rate, since Figure 5 mainly indicates to mean that productivity is much more volatile than any of the other measures of the real exchange rate, rather than “figure 5 testifies forcefully the absence of any link if using the official real exchange rate series, whilst the newly constructed real exchange rate series seem to move [in] tandem with the productivity differential”. Maybe this figure could be re-interpreted?

**ANSWER:** Thank you, we will be more precise in the revision and will give the exact definition. As pointed out earlier, the official real exchange rate series is not depicted in Figure 5. We will need to put it in (from Figure 2), so that we can keep the wording. Looking at Figure 2 suggests that the content of the text is OK, but the missing official series is misleading. We will also show the other measures of productivity.

(6) Why introduce equation (3) which suggests the real interest rate differential is important for real exchange rates but not include this variable in your estimations? Maybe this could be tested or at least suggest that you are following Loko and Tuladhur.

**ANSWER:** This point was also raised by the other referee. We will explain in the revision why we do not use the interest rate differential.

(7) In the introduction “the real exchange rate has been depreciating...during the last ten years” while figure 1 suggests that the real exchange rate against the Euro has been appreciating in recent years. Is the former an effective exchange rate?

**ANSWER:** We stated in the introduction that “the officially published real exchange rate has been depreciating rather than appreciating during the last ten years or so”. This series is displayed in Figure 2

where one can clearly see the depreciation. At the same time, Figure 5 does not contain this series. We will be more explicit about this when coming to Figure 5 in the revised version.

### **Other points**

It is more standard to have an increase in the real exchange rate equivalent to an appreciation; maybe this definition could be used throughout the paper. Acronyms are not defined e.g. DSGE, CEE-5. Far from obvious rather than “it is far to be obvious”, page 2. Heading to figure 2 is the same as figure 1, although the graphs are different.

**ANSWER:** Thank you, we will correct for these in the revision. Regarding the direction of appreciation and depreciation, I think it is an issue of definition. We define it in footnote 1 at the beginning of the paper.

### **Reference**

De Gregorio, J., X. X. Giovannini and H. C. Wolf (1994) International Evidence on Tradables and Nontradables Inflation, *European Economic Review* vol. 38, pp. 1225–44.  
MacDonald, R. (2007) *Exchange Rate Economics: Theories and Evidence*. Routledge.  
MacDonald, R. and L.A. Ricci (2005) The Real Exchange Rate And The Balassa-Samuelson Effect: The Role Of The Distribution Sector. *Pacific Economic Review*, vol. 10, pp. 29-48.