Response to Referee 1's Report on
Normalized CES supply-side system approach: How to replicate
Klump, McAdam, and Willman (2007)?

Thank you for your insightful comments, all of which will be addressed to improve the paper. Responses are given below in blue (following the original comments).

Comment 1: The paper talks a lot about replication methods in general and explains the mechanics of KMW. I think however – largely for readers' sakes – that it's important to point out that the model had a life beyond this 2007 publication. I think therefore the KMW 2012 normalization survey paper should also be cited, as should the Leon-Ledesma, McAdam, Willman AER paper (2010) since they contain additional information on the framework and additional results on its robustness and characteristics.

Response: We appreciate this comment and agree with you that both papers are relevant and should be cited in our paper. A brief discussion of these papers will be added to section 2, last paragraph. Specifically, we will state:

"Leon-Ledesma et al. (2010) use the normalization approach to identify the conditions under which joint identification of capital-labor substitution elasticity and technical biases in production are feasible and robust and also show that this technique is superior to single-equation estimation approaches especially when merged with ``normalization". Further, Klump et al. (2012) presents an exhaustive survey assessing the intrinsic links between production (as conceptualized in a production function), factor substitution (as made most explicit in Constant Elasticity of Substitution functions) and normalization (defined by the fixing of baseline values for relevant variables). All these studies justify more extensive use of CES production functions in dynamic macroeconomics."

Comment 2: I think it's also worth (if trivial) to point out that the KMW study cannot 100% be replicated unless you have exactly the same data that they used. The authors write:
" … When replicating this study, we believe that a verification approach should be used. The data should be remeasured using similar methods to verify and rectify any potential measurement errors or coding errors in the original study. Further, the sample period should be extended to the most recent data available as the result should not be sensitive to a larger sample period."

It is impossible to create original data set, because new vintages of NIPA data (also history) differ. Typically differences across vintages are small but especially regarding capital stock data differences may be larger. Hence, it is clear that it is impossible to do

exact replications but this shouldn't be a big issue if results are reasonably close to original. However, if not, there may be difficulties to clarify whether differences are real or reflect some unnoticed mistakes in recreating the data that is used in replication. Regarding the use of an expanded data horizon, this raises the question is the study any longer a replication, but an extension which may or may not produce as "good" results as KMW found. In short the authors should maybe tone that down a little bit, or nuance that message a little more.

Response: We agree with you. A discussion that nuances our original message will be added in section 3.1 last paragraph. Specifically, we will state:

"When replicating this study, we believe that a verification approach should be used. The data should be remeasured using similar methods to verify and rectify any potential measurement errors or coding errors in the original study. It should be noted that it is impossible to recreate the original data set since new vintages of NIPA data differ. While differences across vintages are small, differences for capital stock data may be larger. Thus, according to the verification approach, a replication may yield results that are reasonably close to original but not exact replications. This doesn't pose so much of an issue. However, there may be difficulties in clarifying whether differences are real or a reflection of some unnoticed mistakes in recreating the data that is used in replication. If the sample period is extended to the most recent data available, one may or may not reproduce results as in KMW. Since, the results in KMW may be time-sensitive."

Comment 3: Equations 3 - 4 presentationally look awful. Could the authors somehow try to improve them, getting them all on one line for example?

Response: We will make sure these equations are aesthetically pleasing in the revised version of our paper.

Comment 4: The Kmenta approximation presented actually is the Kmenta approximation with additionally non neutral technical progress, so it should rightly be attributed to the KMW, 07 paper as an extension of the original Kmenta approximation.

Response: This will be addressed in the revision. We will state:

"…as well as the Kmenta approximation with non-neutral technical progress, Klump et al. (2007). This is an extension of the original Kmenta approximation of the production function, Kmenta (1967), around the baseline values and fixed points to allow for the separation of the total factor productivity (TFP) term from the rest of the production function.."