

Referee report on: "Production Constraints and the NAIRU"

Summary.

The paper introduces capital constraints in the NAIRU model. Most of the previous literature only constrains labor, so one of the contributions of the present paper is that the model contains both capital and labor constraints. The paper argues that there has been a structural break in such constraints in the UK in the Eighties, and provides empirical evidence in favor of the thesis.

Main comments.

1. the discussion on the frequency components on page 4 seems to be quite independent from the rest of the paper – I suspect that it might be rephrased in the time domain avoiding the frequency components representation – in order to make the paper more consistent, I would suggest dropping it from the paper or rephrasing it in the time-domain.

2. The paper should explain why their empirical findings is important. In other words, why is it important that there has been a break in the labour and capital constraints? What are the economic implications of such a break for policy analysis? Or for other economic analyses.

3. Section 1 discusses possible causes of a structural break. By looking at the estimated time of the break, could the paper identify which specific cause or causes would be more likely?

4. it is not clear how the andrews' procedure is implemented – the procedure outlined in pages 8 and 9 seemst to be for a structural break in either LC or KC – meaning we search a break with a t-test first on LC then on KC *independently* (this is what the picture seems to show). So the discussion should be rephrased.

5. I am not clear about the contents of figure 1. Andrews' procedure requires to compare estimates of the parameters before and after the break. Are the parameters shown here those estimated with data only before the

break? or only after the break? Note that in any case, the parameters are estimated with very different sample sizes, so some parameter estimates will have much bigger uncertainty than others (for example, if the parameters that are shown here those estimated with data only before the break, then the first parameter estimates will have much more uncertainty than the ones estimated later on). I would suggest adding standard error bands (that take into account the different sample sizes) to judge their significance.

6. Which instruments have been used in the GMM procedure? Could a discussion be added on how good such instruments are?

7. Is the estimator robust to serial correlation? How has the serial correlation been taken into account in the implementation of Andrews' procedure? Could the paper clarify?

8. The paper says that the common "practice in the literature is to impose the restriction $\eta_t = 1$ for all t". I was wondering if it would be useful to test that hypothesis directly (rather than just looking for a structural break in each of the two parameters independently, as the paper currently does)? If that is really the hypothesis of interest, then the test could be a joint test for structural break and a null hypothesis on the parameter. In other words, this would be a test that the coefficients β_2 and β_3 are equal at every point in time ($\gamma \equiv \beta_2 - \beta_3 = 0$) and it is constant over time ($\gamma_t = \gamma$) – note that this is different from testing whether β_2 or β_3 have a break. I suspect that this test would have even a higher probability of rejecting the null than the Andrews' tests presented in figure 2 and would strengthen the results of the paper. Such tests have been used in the GDP-yield curve relationship for example by Zagaglia, "Does the Yield Spread Predict the Output Gap in the US?" (available on ideas.repec.org).

Minor comments.

1. it is stated that "the traditional NAIRU model focuses on the single factor labour in driving the output gap" – references should be added here to the relevant literature

2. on page 4, line 2, it is stated that "the standard NAIRU model may be represented as" . Could some additional references be added (papers/books that used this "standard" model)?

3. the paper claims that "we are extending this (andrews') framework into the GMM panel data estimators". I would not see this as an extension: Andrews' procedure is designed for GMM estimators, so unless there is something special about the framework of this paper, this is an application of that technique, not an extension, so I would rephrase that as: "we apply this framework to our GMM panel data estimator" . If instead the procedure really requires an extension, then the properties of Andrews' test should be derived and proved.

Possible typos:

The paper contains a high number of typos that should be corrected.

1. Ceccetti should be Cecchetti on page 1, middle
2. Holmstom on page 3 should be Holmstrom
3. Sin should be sin in eq 2
4. beak -> break on line 11 page 8
5. Finaland -> Finland on note 8