Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University

Student:	**Ondřej Hájek**
Advisor:	**prof. Ing. et Ing. Luboš Komárek, M.Sc., MBA, Ph.D.**
Title of the thesis:	**The BEER Formula: Analysis of Equilibrium Exchange Rate of Czech Koruna**

OVERALL ASSESSMENT

Short summary

The thesis estimates exchange rate misalignments in the Czech economy using the BEER (Behavioral Equilibrium Exchange Rate) model. Five variables are considered as determinants of the equilibrium exchange rate (EER), two of which are statistically significant across various model specifications. The author demonstrates that relative productivity vis-a-vis the foreign environment and the real interest rate differential are key factors driving the exchange rate.

Contribution

The topic is relevant from both an academic and policy perspective. The exchange rate is one of the potential policy instruments available to the central bank; thus, understanding its equilibrium level is important—particularly in the context of the Czech Republic as a small open economy that recently experienced a period of high inflation, to which the central bank responded with considerable policy tightening.

Furthermore, the CNB's forecasting framework is currently under review, and the empirical validity of the uncovered interest parity condition is being questioned. In this context, the identification of the real interest rate differential as a key determinant of the EER represents a highly relevant and timely conclusion from a policy standpoint.

Methods

The thesis employs appropriate econometric methods for estimating the EER, particularly through the use of OLS and the ARDL model with an error correction term. The model is carefully constructed, taking into account all necessary assumptions, and residual diagnostic is conducted in a satisfactory manner.

Tests for structural breaks are performed where suggested by the time series evolution. However, it would be beneficial to estimate the model on subsamples to assess the robustness of the results, particularly in light of the structural break identified in the net foreign assets (NFA) series. Additionally, while the discussion addresses specifications involving the real interest rate differential using both short- and long-term interest rates, I was unable to locate corresponding estimation results for these variants. Including them would strengthen the empirical analysis.

Finally, I would question the relevance of the following statement in the context of Czech data: "Annual time series typically extend back to 1980, providing the longest time horizon." Given the profound social and economic transformation in the 1990s, this claim appears inappropriate for the Czech Republic.

Literature

The author provides a useful overview of different types of equilibrium exchange rates EERs and the various approaches for estimating them. The choice to focus on the short-run equilibrium is well justified, given its relevance for monetary policy analysis. However, the subsequent detailed discussion presenting models for medium- and long-run equilibrium exchange rates appears somewhat redundant. Instead, it would be more appropriate to provide an overview of the various models suitable for estimating the short-run equilibrium exchange rate, followed by a clear rationale for selecting the BEER model as the preferred framework.

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The thesis lacks sufficient economic intuition regarding how the selected explanatory variables influence the EER. Moreover, the motivation for the choice of specific fundamentals is not clearly articulated, particularly in cases where some variables are found to be statistically insignificant or yield counterintuitive results. Additionally, the empirical findings are not sufficiently discussed in the context of the existing literature, which would have helped to frame the results more effectively and assess their consistency with prior research.

Manuscript form

The thesis is generally well written and typeset. However, some figures—particularly Figures A1–A3—are difficult to read due to their small size and should be enlarged for better clarity. While the overall structure of the text is coherent, there are some weaknesses in consistency and focus. For example, the abstract emphasizes the relevance of the real interest rate differential, yet the main body of the thesis places more emphasis on other aspects, such as the structural break in NFA. This discrepancy weakens the cohesion between the stated objectives and the core analytical content.

Overall evaluation and suggested questions for the discussion during the defense

In my view, the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, I recommend it for the defense and suggest a grade A.

The results of the Turnitin analysis do not indicate significant text similarity with other available sources.

Questions:

1. Could you elaborate on why you chose the BEER methodology over other approaches mentioned for evaluating short-term exchange rate misalignments? What are the specific advantages of BEER in this context, particularly given the objectives of your thesis?

2. How do your empirical results compare with the findings in the existing literature, especially those summarized in Table 2.1? Please provide an economic interpretation of any notable differences in the estimated determinants or levels of exchange rate misalignment.

3. Given that your focus is on short-term exchange rate misalignments, is the inclusion of an error correction term in the ARDL model essential?

4. Based on your estimated exchange rate misalignments, how would you assess the Czech National Bank's exchange rate interventions in 2022, when it utilized foreign exchange reserves to appreciate the koruna in response to inflationary pressures from import prices? Do your results provide support or raise questions regarding the appropriateness of such policy actions?

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SUMMARY OF POINTS AWARDED *(for details, see below):*

CATEGORY		**POINTS**
Contribution	*(max. 30 points)*	30
Methods	*(max. 30 points)*	28
Literature	*(max. 20 points)*	15
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**91**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE:

DATE OF EVALUATION: *Digitally signed (May 21, 2025)*

Tomáš Šestořád

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Overall grading:

TOTAL	**GRADE**
91 – 100	**A**
81 - 90	**B**
71 - 80	**C**
61 – 70	**D**
51 – 60	**E**
0 – 50	**F**