

# Report on Bachelor / Master Thesis

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

<b>Student:</b>	Tomáš Fencel
<b>Advisor:</b>	doc. PhDr. Martin Gregor Ph.D.
<b>Title of the thesis:</b>	Lockdown Policies and Firms' Investments in a Two-Period Macroeconomic Model

## OVERALL ASSESSMENT:

### Short Summary

The aim of this paper is to study the efficiency (or lack thereof) of the lockdown policies in the case of limited credibility of the Government's commitment to said policies. The author builds a two-period dynamic model based on the work by Moser & Yared (2021). In this model, the government is able to create a binding lockdown plan for both periods in advance (at  $t=0$ ). However, in the following period ( $t = 1,2$ ) decide whether to **commit** to this plan or deviate **after** observing the firms' investment decision for a given period.

The author lacks to deliver any specific conclusion on whether the commitment is preferred or not in the two-period settings. However, claims that since the model without commitment is nested in the model with the commitment it should be at least as good.

Meaning in the model with commitment - a pre-defined plan of restrictions for both periods – the government has an option to deviate and convert to the default game of no commitment

On page 23, the author states: „Hence new societal welfare-maximizing optimum might be reached [in case of commitment] while the societal welfare-maximizing optimum of the case with no commitment remains achievable. Thus, with a commitment to a future lockdown policy, the government cannot end up worse off than without commitment, but it can end up better off.“

I would strongly recommend the author bring more supportive evidence based on the model, rather than pure intuition.

### Contribution

The research topic is highly relevant and important. I appreciate the interest of the undergraduate student in the topic and the ambition to address the given question with the state-of-the-art methodology, using the advanced macro model.

However, the pure contribution of the project is not much. As stated in the manuscript, this work closely follows Moser & Yared (2021), extremely simplifying their advanced model and bringing in some very strong assumptions.

### Methods

The author describes 14 models, some conceptually different (changing exogeneity and endogeneity of the variables), some functionally different. The author discusses and only partially solves some of the offered variations.

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In the linear models (1-6), he unsurprisingly gets the same solutions for the optimal investment and policy (in all these models functional forms remain same).

- **Investment:** The production function form  $y = x + l$  and the profit maximization problem of  $n = y - rx - wl$  (without constraint) results in an optimal solution to be maximum investment available for the firm (as profit increases faster in  $x$  than decreases as  $r < 1$ ).
- **Optimal Policy:**
  - $L2 = 0$  always since lockdown in the second period does not have any positive effect, considering there is no third period.
  - $L1 = 1$  always, since it has no effect on the investment decision (considering production function), and it affects the labor supply and healthy population in the next period. hence it is always better to have a lockdown since it will ensure a level of a healthy population is constant.

In the non-linear models (7-10), the author assumes a production function that has decreasing return to scale (mistakenly claiming it is a CRRA production function on page 19). The author hardly solves these models, only touching on the welfare maximization problem without actually solving it. Equations 4.7 and 7.8 are two parts of what should one lagrangian of  $dW/dL1=0$  in the case of first policy optimization. The author concludes 4.9 through some discussion, this should have been implied if he had taken the full derivative of welfare function  $dW/dL1=0$ . There is no solution presented to the said problem.

Here, the author concludes that  $L2=0$  in every case, for a very similar reason as above, and does not derive  $L1$ .

Moreover, I am not convinced by the notion of **exogenous** policy and investment decisions, when the author claims to study the effect of lockdown policies on the firm's investment **decisions**.

The author only briefly mentions what would go into models 11 to 14, without any attempt to solve them or derive any implications, which I do not mind. I am not convinced that they can bring any additional value to the discussion.

Overall, the presented methodology could be a great exercise for the student to look at the details of the model building and play with different specifications. However, I am not convinced that presenting 14 different specifications was necessary or added any value to the manuscript.

The profit maximization problem shown in 4.5 should have equality (instead of more or equal) since the maximum point is reached at a zero slope.

I would prefer to see two or three well-developed, well-structured models, that author could thoroughly solve, compare and conclude from.

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## Literature

A literature review could have been broader and more coherent. Here too, the author opted to follow Moser & Yared's (2021) structure. However, overall it is well written and delivers the message clearly.

## Manuscript form

The manuscript is well structured. It is well written, however, given the choice of advanced methodology it lacks depth and detailed discussion of each specification.

## Overall evaluation and suggested questions for the discussion during the defense

Most of my comments are included in the methodology section. I would further recommend against using passive voice in academic writing.

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 of **C**.

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

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

<b>CATEGORY</b>	<b>POINTS</b>
<i>Contribution</i> (max. 30 points)	15
<i>Methods</i> (max. 30 points)	18
<i>Literature</i> (max. 20 points)	18
<i>Manuscript Form</i> (max. 20 points)	20
<b>TOTAL POINTS</b> (max. 100 points)	<b>71</b>
<b>GRADE</b> (A – B – C – D – E – F)	<b>C</b>

**NAME OF THE REFEREE:** Nino Buliskeria

**DATE OF EVALUATION:** 31.08.2022

Digitálně podepsáno (31.08.2022)  
Nino Buliskeria

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**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