Report on **Master Thesis**

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

Student:	**Yuexin Pan**
Advisor:	**Matěj Bajgar, DPhil.**
Title of the thesis:	**The Development and Innovation Research of Chinese SMEs in Post-COVID Era**

***OVERALL ASSESSMENT** (provided in English, Czech, or Slovak):*

Please provide a short summary of the thesis, your assessment of each of the four key categories, and an overall evaluation and suggested questions for the discussion. The minimum length of the report is 300 words.

Short summary
The thesis studies innovation behaviour of Chinese small and medium enterprises (SMEs). Specifically, it tests 6 innovation-related hypotheses on a cross-sectional sample of 87 Chinese SME firms for which data were collected via an online questionnaire. It finds that there is a positive correlation between R&D investments and innovation performance, government subsidies have a positive impact on corporate R&D investment, firm size and firm age are negatively correlated with firm R&D investment, firm's positive perception of external environment is positively associated with its R&D investment and its risk aversion is negatively correlated with its R&D investment.

Contribution
The study tests the following 6 hypotheses:
1. There is a positive correlation between R&D investment and innovation performance.
2. Government aid policies/subsidies have a positive impact on corporate R&D investment.
3. Firm size is negatively correlated with firm R&D investment.
4. The establishment time of a firm is negatively correlated with its R&D investment.
5. A firm's positive perception of the external environment is positively correlated with its R&D investment.
6. A firm's risk aversion is negatively correlated with its R&D investment.

There exists a large literature that studies innovation performance of SMEs and its determinants, including public support. The thesis explores an important and interesting topic, but it does not explain in what ways it is new and what it contributes to existing literature. The tested hypotheses are not new and have been widely studied, often using superior data and techniques.

Methods
The author of the thesis collected the data via an online questionnaire, constructed by the author. About 400 SMEs received the questionnaire, and only a minority replied, resulting in a cross-section sample of 87 SMEs. The sample has been analysed with a combination of basic statistical techniques such as descriptive statistics, correlations and an OLS regression.

The data represent the most important weakness of the thesis. Studies in the literature tend to use large, nationally representative datasets of firms from administrative sources, financial statements or government surveys, and panel datasets are the norm given their clear advantages for estimation and studying trends. In contrast, the thesis relies on a cross-section self-collected survey counting 87 firms. It is hard to draw reliable claims about „Chinese SMEs" from such a small sample. (The sample size might be fine in the case of a qualitative research, e.g. based on extensive interviews with company managers. However, analysis in the thesis is quantitative in nature.)

In addition to the data limitations, the methods in the thesis also have serious shortcomings:
1. The techniques (a cross-sections OLS regression) are relatively simple for a master thesis.
2. Limitations of using a cross-section dataset are not discussed.
3. Outcome and explanatory variables are coded as 1,2,...,5 for 5 discreet categories (e.g. intervals of R&D investment) but treated as continuous variables in the regression analysis (where using dummies for each discreet category would be more appropriate).

Report on **Master Thesis**

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

Student:	**Yuexin Pan**
Advisor:	**Matěj Bajgar, DPhil.**
Title of the thesis:	**The Development and Innovation Research of Chinese SMEs in Post-COVID Era**

4. It is not explained whether robust standard errors are used (homeskedasticity is not tested).
I am also doubtful about the 6 hypotheses, which are all confirmed in the analysis despite some of them being rather implausible, which makes it look like they are ex-post justification of the results rather than true ex-ante hypotheses. In particular, hypotheses 3 and 4, respectively claiming that R&D investments (in levels, not as intensity ratios) are negatively related to firm size is simply not true in any population of firms I can think of.

Literature
The literature review is placed immediately after a very general introduction (not particularly related to the analysis in the thesis, see also below). As a result, it is not clear to the reader what the review is reviewing, becase it is not clear what the thesis is about. The literature review discusses a very large literature, without much structure, as a result of which the cited studies represent a small (and not necessarily representative and the most canonical) fraction of the overall literature.

It is also odd that the literature review (section 1 of the thesis) consists of a main part and then a subsection 1.1, but no other subsections.

That said, an adequate number of studies are cited by the thesis, and the citations done in the appropriate way.

Manuscript form
The thesis is appropriately formatted and well written in good English, and its structure is mostly fine. That said, there are a few issues:
- The thesis contains no roadmap (a paragraph explaining the structure of the thesis) and as a result relationship between certain sections is not obvious. In particular, it is not clear what the role of sections 3 (Chinese SMEs phenomenon and policy comparison) and 4 (Analysis of government policies of SMEs in Japan compared to the Chinese policies). These do not represent a literature review, as they contain almost no references, but they are also only loosely related to the empirical analysis in the thesis. They probably represent a background to the empirical analysis, but they it is not logical that they are placed only after the data and methodology section. It is also not made clear while the thesis contains an extensive discussion of policies in Japan but not in other countries.
- The Introduction contains only a broad discussion of SMEs in China. It is not at all clear from the introduction what the analysis in the thesis is about.
- There are MS Word track changes left on page 4.

Overall evaluation and suggested questions for the discussion during the defense

The thesis explores an important broad question (determinants of firm R&D investments), and it is well written and presented. It also contains original quantitative analysis performed on newly collected data. A considerable amount of work has clearly been put in the thesis, not least when constructing and collecting primary data via an online survey. On the other hand, the thesis is suffers from important shortcomings, in particular
1. Unclear contribution to the literature.
2. A very small (non-random) sample consisting of 87 cross-sectional observations.
3. Simple statistical techniques employed.

Overall, I recommend the thesis for the defense and suggest grade E.

During the defense, the committee may want to ask the following questions:

Report on **Master Thesis**

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

Student:	**Yuexin Pan**
Advisor:	**Matěj Bajgar, DPhil.**
Title of the thesis:	**The Development and Innovation Research of Chinese SMEs in Post-COVID Era**

1. If you started the work on your thesis again from the beginning, would you again collect your own data or would you take a different approach? What alternative data sources (in China or elsewhere) could you used to address your research questions?
2. What are the main limitations of cross-sectional data? What are the advantages of panel data?
3. Do you find it generally plausible that smaller firms invest more in R&D than larger firms?

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

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

CATEGORY		POINTS
Contribution	*(max. 30 points)*	10
Methods	*(max. 30 points)*	10
Literature	*(max. 20 points)*	14
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**52**
GRADE	**(A – B – C – D – E – F)**	**E**

NAME OF THE REFEREE: Matěj Bajgar, DPhil.

DATE OF EVALUATION:

_____
Referee Signature

Report on **Master Thesis**

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

Student:	**Yuexin Pan**
Advisor:	**Matěj Bajgar, DPhil.**
Title of the thesis:	**The Development and Innovation Research of Chinese SMEs in Post-COVID Era**

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**