

Report on Master Thesis

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

Student:	Bc. Karolína Maderová
Advisor:	Vilém Semerák, Ph.D.
Title of the thesis:	Production shifting from China to Vietnam: Implications for Global Value Chains

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

Ms. Maderová opted for a highly topical policy-relevant topic which aimed to analyze (i) the rise of dependencies of Western countries on the Chinese economy and (ii) the extent to which Vietnam has become (and might become in future) an alternative actor which the West could use to hedge against the dominant position of the PRC.

The author attempts to describe and quantify the general position of the countries (and their industries) in global production networks based on network analysis and centrality measures (including the PageRank centrality), then the attempts to evaluate (and, in fact, to decompose) the facts into backward and forward dependencies respectively.

The methodology is relevant and adequate for the analyzed topic, the latest data were used for the analysis. The presented results appear to be plausible; for example, the outlined combination of the increasing role of Vietnam for Western economies with increasing mutual reliance between China and Vietnam is in line with recently published (and intensively discussed) new papers, including Freund et al. (2023) which used a different methodology.

Contribution

The text uses adequate and up-to-date methods and obtains credible results from the latest data available. A minor modification of the global hypothetical extraction methods has been used to calculate the export-related dependencies of Western countries on Chinese markets. The text also applies network methods on data from input-output tables, which is an approach which has received quite a lot of attention (internationally) in recent years but has not been discussed too much in the Czech environment yet.

A decent survey of literature for the respective methodologies and a description of available alternative data sources is provided, too.

Methods

Two main types of methodologies were used: network analysis (applied to data from input-output tables) and input-output methods derived from the traditional Leontief model (key sector analysis, hypothetical and global hypothetical extractions, newer forms of trade in value-added decompositions). Unfortunately, the author did not fully succeed in adding yet another stage, i.e. incorporating additional newer approaches to key sector analysis based on Inamata & Hanaka (2021) due to time constraints.

Both the sources of data and the choice of methodology can be described as adequate to the topic. Alternatives do exist: Firstly, input-output data can also be used as input data for more advanced computable general models, but this comes at the expense of a plethora of additional strong assumptions and added complexity, which can often obscure the logic behind the results. Secondly,

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broad econometric models (such as the Cambridge E3ME model) have also been used to analyze similar questions, but these typically suffer from other issues. Still, while I agree with the decisions on the models, a brief outline of possible alternatives and their (dis)advantages would have been nice.

The description of Leontief's input-output model is relatively detailed; what might have been useful would be to discuss whether the relatively strict assumptions on the production functions (and technical coefficients) are relevant for multiregional input-output matrices, too. Leontief's (and, for that matter, Ghosh's) model in its basic form assumes constant technical coefficients (input ratios); extending this approach to multiregional tables means, in fact, a significant change in the relative approximateness of this assumption. Ms. Maderová realizes this issue and, at least in the derivation (p. 15), differentiates between technical and input coefficients but does not discuss possible implications in detail. This is, however, not uncommon in literature.

Ghosh model is outlined in the thesis too (including its more modern reinterpretation, but it was not used in the empirical section - instead the more modern decompositions were used to provide comparable results.

A modified form of global hypothetical extraction is used for the backward dependencies; modern value-added accounting techniques are used to provide empirical results for forward dependencies. Both approaches are rooted in relatively recent literature, such as Dietzenbacher (2019), which inspired the modified form of global hypothetical extraction, or very recent texts by Borin & Mancini (2017 & 2023) instead of the original "KWW" for the value-added accounting techniques.

The author dedicates quite a lot of space to the description of the methods (and, in some cases, also to their derivation). Adding also a more detailed discussion of possible problems of the results (and methodologies) behind them would have made the text more balanced.

Data-wise, the paper is based on the latest edition of OECD ICIO tables, which cover the period 1995-2020. In fact, the data used in the thesis could be seen as being to some extent, preliminary (OECD published them, then they were removed from their site although they were accessible indirectly). If fully finished on time, the thesis had the potential of bringing really new results into the debates about decoupling/derisking.

Literature

This is a fairly hot topic; therefore, some newer texts were published (at least in their preliminary versions) during the last months of the student's work; perhaps most importantly Freund et al (2023): *Is US Trade Policy Reshaping Global Supply Chains?* (preliminary version appeared in May 2023). Similarly, the GTAP database received an update a few months ago, which however would not be likely to influence the author's conclusion on its usability at all (p. 30).

Concerning methodology, the author cites relevant papers and builds upon fairly recent contributions, such as Borin & Mancini (2023).

Unfortunately, some incomplete references are left in the bibliography: P. 57: Baldwin (2012), Borin & Mancini (2021). Even though most of these are easy-to-find text, providing the name of journal etc. was expected.

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Concerning the non-economic issues discussed by the author in the introductory and literature review sections, I am not quite sure whether we can really say that the worldviews of China and Vietnam diverged too much (p. 7); they are probably still closer to each other in terms of worldview than they are with most other partners respectively. This, however, does not mean that Vietnam lacks rather strong motives to outweigh the influence of China in the region. Similarly, the praise for a positive influence of one one-party environment on Vietnam's stability (p. 7) should be a bit more nuanced.

Manuscript form

The text is written in decent and easy-to-understand English without disturbing errors or grammar issues that would hamper the readability of the text. Similarly, the formatting of equations, figures and tables is mostly quite fine.

At the same time, despite the author's effort, some omissions make it visible that the thesis was being finished under time pressure. Not only this, but most of the scarce time was spent on additional calculations, rechecking of results, etc., some of which were quite time-consuming (in fact, on the verge of performativity) on the computer equipment available to the author.

Some of the omissions:

- The aforementioned missing details for some contributions in the bibliography.
- The author does not explain what Gephi is (p. 34).
- In section 5.3 - hypothetical extractions can be used on both backward and forward linkages (p. 40).
- The mention of an equation on p. 43 does not include the number of the equation.
- The differentiation can be difficult in such an interconnected system, but I would rather refer to the HEM and GEM results as backward linkages (p. 45). The naming convention used by the author seems to be influenced by the terminology (direction) used when we discuss participation (forward participation / backward participation); in fact, her trade decomposition provides results on backward participation from the point of view of the EU, but forward linkages (if we are discussing the importance of China). Perhaps a bit more extended discussion of the terminology might have made this point clearer.
- The "bottom-down approach" (p. 10) should perhaps better be described as a "bottom-up perspective" (even by the cited author), and some additional details might have been provided (e.g. it is not necessarily about upgrading only!).

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

The results of the Turnitin analysis show a slightly higher overall similarity score (23%), however, a more detailed analysis reveals that the results do not indicate significant text similarity with other available sources.

In my view, the thesis fulfils the requirements for a Master thesis at IES, Faculty of Social Sciences, Charles University; **I recommend it for the defence and suggest a grade B.**

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Questions for the defence:

1. Assume that we would try to use the HEM approach for applied policy analysis. Would you consider the calculated numbers to be a realistic estimate of possible effects or, rather an upper/lower bound for the effects?
2. Why can a realistic prediction of shocks propagated of forward linkages be more difficult than the prediction of shocks propagated by backward linkages?
3. Clarify the issue with the data. Can the data (and the results) be considered official now?

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

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	27
<i>Methods</i> (max. 30 points)	25
<i>Literature</i> (max. 20 points)	16
<i>Manuscript Form</i> (max. 20 points)	14
TOTAL POINTS (max. 100 points)	82
GRADE (A – B – C – D – E – F)	B

NAME OF THE REFEREE:

Vilém Semerák

DATE OF EVALUATION:

September 15th, 2023

Digitally signed (September 15th, 2023)
Vilém Semerák

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