

Report on Bachelor / Master Thesis

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

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| Student: | Bc. Sergey Balitskiy |
| Advisor: | PhDr. Wadim Strielkowski, Ph.D |
| Title of the thesis: | Natural Gas Consumption and Economic Growth in EU |

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

This thesis analyses econometric dependencies between gas consumption and economic growth. It's written in good English and in quite a readable style. Even the author was very much afraid that his thesis is too short for a Master thesis. Don't do that! Good theses might be shorter than 50 pages and still score the highest points. Instead, the reader is forced to read through extensive tables (unit-root testing takes 8 pages just for example) and offended by loads of half-empty pages and four equations spread across two pages for no reason.

The overall structure of the thesis is good, apart from the conclusion, which contains thoughts which aren't linked to the paper at all.

It is clear, that the author has put a lot of effort in mastering various econometric techniques, especially with unit-root and cointegrating testing. And he should be praised for that. The models per se and interpretation of the results were, however, quite unfortunate. The author is likely to have, from what I can say, a huge "spurious regression" problem in one of the models and does not acknowledge that. The discussion contains the results but not what implications do they have.

In my opinion, the author underestimates the role of weather and price of gas on its consumption. Households' consumption is heavily dependent on average temperatures in heating season (in CZ it's from September till March), the industrial usage of gas (such as in metallurgy or fertilizer industry) is then more dependent on price. Neither of these drivers enters the model, which is a pity.

I would assess this thesis as an honest try with mixed results. In case of a successful defence, I propose grade 2 ("good")

Individual comments

p11 Also

p13 which points out

p15 - I guess Norway does not have any need to "import" gas...

p15 Natural gas dependency is not explained

p16 chart 2.2. is no histogram

p17 you're missing the greatest benefit of natural gas energy. Unlike for nuclear and renewable sources, it can adjust its energy production very quickly and thus serves as best peak energy source

p25 who ARE economically active

p25 don't you think, employing current USD value for stock of capital might be heavily dependent on historic exchange rate evolution? Won't some locally-normed terms be more appropriate?

p26 you are using definition of labour force for people above age of 16, whereas in above chapters, you've spoken about age 15+ - unify that

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p30 you acknowledge the importance of winter for gas consumption. Why didn't you employ average winter temperatures in your calculation? I'm afraid it might be a very serious driver for gas consumption

p36 why on earth did you need a two pages for only 4 equations??

p39 source for table 4.1 is on a different sheet

p38-45 eight pages on unit root testing?? Well, this should really go into appendix!

p45, p47 I'm missing some summary of unit roots test and cointegration tests - what do the results tell us? What if the data is not fully stationary/non-cointegrated? Such an explanation would be definitely more appreciated by the reader than above definition of GDP

p48 you are using OLS with no mention on basic 4 OLC conditions. Why?

p49 0.0000000055%... ...please use scientific notation for such numbers nobody is going to count the zeros

p50 log specification is NOT the same as taking first differences!

The results (R -squared $>0,95$ and coefficient for LK = 1,03 should have warned you, that you are likely falling into a spurious regression!). I doubt Ladislav Křišťoufek nor Tomáš Havránek have seen and approved this.

p53 "thatseven", "coefficientswith"

p57 thatthree

p59 you are talking about long-run equilibrium – but both GDP and GC curves seem highly trending to me...

p60 oth, GDP and capital, does not have

p61 “On the other hand, one clearly sees that the increase of natural gas consumption leads to the decrease of economic growth.” One definitely cannot see this from your results! First, there is no evidence of the real causality – whether gas consumption causes something in GDP growth. Moreover, you have not at all taken into account gas prices in your model (which are generally not defined only by EU states) – even though you acknowledge its role on p62

p61, p62 – why are you writing about gas dependency and ecological sources of energy in the conclusion when you haven't paid them any attention in the body of the thesis?

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

| CATEGORY | POINTS |
|---------------------------------------|-----------|
| Literature (max. 20 points) | 20 |
| Methods (max. 30 points) | 16 |
| Contribution (max. 30 points) | 15 |
| Manuscript Form (max. 20 points) | 11 |
| TOTAL POINTS (max. 100 points) | 62 |
| GRADE (1 – 2 – 3 – 4) | 2 |

NAME OF THE REFEREE: PhDr. Jakub Mikolášek

DATE OF EVALUATION: 5.2.2015



Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

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

Strong Average Weak
20 10 0

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.*

Strong Average Weak
30 15 0

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.*

Strong Average Weak
30 15 0

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.*

Strong Average Weak
20 10 0

Overall grading:

| TOTAL POINTS | GRADE | | |
|--------------|----------|----------------|---------------------------|
| 81 – 100 | 1 | = excellent | = výborně |
| 61 – 80 | 2 | = good | = velmi dobře |
| 41 – 60 | 3 | = satisfactory | = dobře |
| 0 – 40 | 4 | = fail | = nedoporučuji k obhajobě |