

Institut ekonomických studií

Fakulta sociálních věd, Karlova universita Praha

Referee report on the Master Thesis

Student Name:	Hana Peroutková
Thesis Supervisor Name:	doc. Ondřej Schneider
Thesis Title:	Pension reforms in the European Union: What can we learn?

The thesis is a voluminous work on pension reforms, with 80 pages of a descriptive survey, 18 pages of analytical work, and 20 pages of data annex. There is very little to say to Chapters 1-3, which essentially introduce into pension systems, following established sources (chiefly OECD 2005). The main work that really corresponds to requirements put on Master thesis is concentrated in Chapter 4.

The thrust of Chapter 4 is a principal component analysis of 48 qualitative and quantitative variables on a sample of 23 EU countries. The approach is definitely legitimate, but I have the following concerns:

- Much of the description of the methods remains unexplained. Why is MTV (maximizing total variance) method selected? (On p. 84, you say that it is closer to the standard technique, so interpretation is easier – why?) How does B-spline optimal scaling of qualitative data actually work? Why is it selected? Do we have any robustness check given the other methods?
- Data: I am not happy with mechanically mixing policy variables, demographic variables, and changes in variables (reforms). This is clearly a mix of dependent and independent variables. In principal component analysis, the components represent best-fitting linear models of relationship such that the models are linearly independent. My feeling is that unless you are sure that your underlying linear models are good (i.e., not omitting variables, solving for endogeneity), including dependent variables is not innocent, because thereby you include spurious regressions.
- Sample size: I'm not qualified to discuss multivariate statistical methods. My feeling is that a sample of just 23 countries may be rather small for 48 variables.
- In Figure 17, we see that fit of variables is almost identical. But, for variables whose vectors (in the space of the two components) are "almost" linear transformations of each other (positively = identical arrows; negatively = opposite arrows), we apparently have collinearity in the underlying models. Can we believe the fit of the individual variables?
- This is a mix of state and flow variables. It seems ridiculous to me to assess determinants of pension reforms on the basis of components created out of variables of pension reforms (even if only 8 out of 48 in total). When analyzing reforms, it is clearly superior to work with components that do not include the reforms.
- With approach above, you should discuss pension reform as a convergence or divergence issue. It only means to transform a reform into a change of state variables (this is not mechanical, and requires some expertise), and correspondingly calculate what a unit change in a state variable means for a unit change in the value of the component. As a result, you get a picture of how countries "move" in the space of the two components, which could be really interesting.
- Importantly, this type of analysis cannot be used for policy analysis (note scarce attempts to make a policy judgment, as on the end of page 91). This is because the analysis gives almost no indication of robustness of the underlying relationships. Principal component analysis is simply not good enough for analysis of that type.

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A 5-page-long conclusion is unsatisfactory. It's too long and does not give clear answers to questions in the introduction. To provide new and moreover ad hoc information is absolutely forbidden in a conclusion (see 2006 EC report on p. 100). It is too little for me to get that you find a five-pillar system (as advocated by the World Bank) reasonable and efficient (p. 100), if you have no analysis on that point. Statements like "...new pension system after reform should enhance characteristics like affordability, adequacy, sustainability, robustness, and equitably" should be avoided as cheap talk unless you carefully specify what you mean. Leave these sentences to journalists and uneducated economists.

The length of the thesis is, in my view, rather a weak point. Excessive focus on descriptive work limits capacity to conduct more analytical work. In short, it is very difficult if not impossible to detect an original contribution on the first 80 pages. With references impressively abounding to 5 pages, I would expect that the core analysis and findings of Chapter 4 will be more embedded in the literature. A 20-page long data annex (1, 2, 4) is in my view unnecessary, because anyone using the data needs a computer file anyway.

Given the large size of the thesis, typos are relatively rare: "On other words" (84), "as a points" (84), "characterisitcs" (90), "easy excess" instead of access (101): Structure and readability of the thesis is good. A minor point is that Figure 17 cannot be read; perhaps it should be divided into categories.

My question for the defense is "In the space of the two principal components, can we observe convergence of divergence of the pension systems?" In the case of successful defense, I recommend "**velmi dobře**" (good, 2).

SUMMARY OF POINTS AWARDED:

CATEGORY	POINTS
Quality of Research	20
Clarity and Readability	10
Content/Quality of Ideas	30
Organization & Development	12
Manuscript Form	5
TOTAL POINTS	77
LETTER GRADE	B