Written Exam at the Department of Economics summer 2017

Philosophy of Science

Final Exam

June 17 2017

Sketch of Solution

Question 1

The so-called *Washington Consensus* reform agenda was (to some extent) based on imitating the competitive model taught in standard microeconomics. That is, the reform agenda aimed (to some extent) to turn developing countries into textbook cases of free-market economies. Use the insights in Dani Rodrik's 'Economics Rules' to discuss whether this approach to economic reform is sound. (Hint: invoke issues of universal versus contingent nature of economic models, second best, and diagnostics in your discussion.)

The Washington Consensus (WC) reform agenda urges developing countries to unshackle themselves from the restraints of government regulation, which international financial institutions - such as the World Bank and the IMF – as well as a few agencies of the US government argued had stifled economic growth. The WC basically teaches that free markets and competition enables the efficient allocation of scarce resources, which in turn will unleash economic growth and development.

The WC adopts a one-size-fits-all approach to economic reform; i.e., it builds on standardized reform blueprint, which is thought to be applicable (almost) regardless of context. According to Rodrik, this is unsound as economic models are always 'context dependent'. That is, there are no universal, general-purpose models, which can be used always and everywhere. Different settings require different models. Identifying the appropriate models to use in a given context entails model selection, which entails picking the models that best isolate relevant critical relationships (more on this below).

The WC pays no attention to second best issues. Instead, WC holds that moving a bit closer toward first best (i.e., the competitive model) is always desirable. However, there can in general be no such presumption, as per the general theory of second-best: This theory basically teaches that if we add further constraints to an optimization problem, the first-order conditions are (in general) different from what they were initially. That is, if one of the Paretian optimum conditions cannot be fulfilled, a second-best optimum is (in general) achieved only by departing from all other optimum conditions. Moreover, as the real world is always plagued by (informational, administrative, and/or technological, say) distortions (i.e., unknown constraints), the WC reform agenda is theoretically unsound. In fact, second best means that travelling from model (theory) to reality (real world) always entails a nontrivial leap of faith.

All of the above suggests that we should adopt a diagnostics approach to economic reform, as opposed the prepackaged (standardized) approach of WC. The diagnostics approach does not

presume that a single model applies to all countries. Nor does it assume that the underlying model remains the same over time for a given country. Rather, diagnostics is a systematic way of thinking about the dynamic process of model selection in a second best world. Diagnostics aims to identify the (few) most important distortions/constraints, and thus selecting the reforms that are aimed at removing these (few) important distortions. As distortions differ across contexts, so will reforms.

Today, both the IMF and the World Bank have admitted that the WC approach to economic reform in developing countries is unsound. Indeed, the have now adopted the diagnostics approach pioneered by Rodrik and others.

Question 2

During the course we discussed that one of the aims of economics is the provision of explanations for social phenomena.

a) What characteristics should a scientific explanation of a social phenomenon have? In connection to this, please explain the 'deductive-nomological model of explanation' and criticisms that have been raised in connection with it.

The answer to this question should include a discussion of the points mentioned on slides 7-25 of lecture 5 as well as the relevant points to this end mentioned in Reiss, Julian. Philosophy of economics: A contemporary introduction . Routledge, 2013. (Chapter 2, 5, 6, and 7)

Karl Popper suggested that only stringent empirical tests can scientifically distinguish between valid and unwarranted models explaining a particular social phenomenon.

b) Discuss Milton Friedman's point of view regarding the importance of empirical tests and what they should concentrate on.

The answer to this question should include a discussion of the points mentioned on slides 8-11 and slides 16-17 of lecture 4 as well as the relevant points to this end mentioned in Friedman, M. (2007) 'The Methodology of Positive Economics', in The Philosophy of Economics: An Anthology. Cambridge: Cambridge University Press, pp. 145–178

c) Furthermore, explain the two main criteria 'simplicity' and 'fruitfulness' which he suggested should be used in judging and choosing between different theories.

The answer to this question should include a discussion of the points mentioned on slides 12-14 of lecture 4 as well as the relevant points to this end mentioned in Friedman, M. (2007) 'The Methodology of Positive Economics', in The Philosophy of Economics: An Anthology. Cambridge: Cambridge University Press, pp. 145–178

Question 3

During the course we talked about the problem of "false-positive" scientific findings. Discuss the problem of false positives in Economics (and/or other fields of science). Focus in particular on the following questions:

What does the term "false-positive" finding mean?

- *False-positive finding or "type-1 error": finding statistical significance that a given condition is present when it actually is not (i.e., rejecting a null hypothesis that is true)*

How can researchers' choices regarding their empirical analysis (the researchers' "degrees of freedom") give rise to false positives? Discuss (at least) 3 examples.

- *Examples: researcher decides on…*
    - *Number of observations*
    - *Exclusion of "outliers"*
    - *Analyzing full sample vs. subsamples*
    - *Which outcomes to focus on*
    - *Which determinants of the outcome(s) to consider*
    - *Number and type of statistical tests conducted on the data, e.g., regression including / excluding specific covariates*
- *A detailed discussion how each of these choices can lead to false-positive problems can be found in lecture notes (Lectures 19/20) and the referenced readings on the syllabus.*

Which institutional features of the academic system may intensify the false-positive problem in scientific publications? What are possible solutions to these institutional problems?

- *Publication pressure (researchers face strong incentives to publish academic articles) together with publication bias (statistically significant findings are easier to publish than "non-results") and imperfections of the peer review system can give rise to false-positive problems in academic publications*
- *Possible solutions: increase transparancy in research and publication process (e.g., requirements for publishing pre-analysis plans, sharing data, etc.), facilitate publication of "non-results", improve incentives for replication studies, etc.*