Comments on
Ilkin Aliyev's Disseration: "Essays on Natural Resource Impact"

Overall Assessment

This dissertation addresses three related issues in nexus between natural resources and macroeconomics. It displays an understanding of the related literature, and it uses a range of theoretical and econometric tools to address well-defined empirical questions. My assessment is that the dissertation is ready for defense, and it should move its author to the next stage in the awarding of a doctoral degree. (My only caveat is that the third chapter does not quite meet the same quality standard as the first two.) The remainder of this document provides more detailed comments on each of the three essays.

Comments on Essay 1: Understanding the resource impact using matching.

In this essay, the student demonstrates a clear understanding of the usefulness and limitations of fixed effect estimation. That understanding is used to interpret the seemingly contradictory findings in the existing literature on the resource curse. The author's interpretation of the literature provides a sensible motivation for using the matching approach in an empirical reexamination of the existence of a resource curse. The use of the matching approach constitutes the chapter's original work.

I have a few questions related to the matching methodology and the underlying theory. The candidate may wish to explore these questions in the dissertation as the work develops.

1. The matching method is the keystone of the chapter's innovation, and the obvious alternative is propensity scoring. So, it would be useful to have a brief discussion of the relative merits of the two approaches. (Alternatively, an examination of the similarity of the results using propensity scoring).

2. While the minimum Euclidean distance measure is an intuitive one, it's not the only natural distance measure. Are the chapter's matching results are robust to alternative distance measures (such as, say, the Mahalanobis)?

3. How is the threshold measure determined? Is there an endogeneous method for determining it? Are the results robust to reasonable alternatives?
4. It would be helpful if the relationship between equations 1.3 and 1.4 were shown more explicitly. A precise enumeration of nesting and particular restrictions would help to clarify the benefits of the candidate's specification.

5. It would be useful to have an outline of the theory that tells us when the resource curse should be more applicable to the *level* of the standard of living vs. its *growth rate.*

Comments on Essay 2: Is Fiscal Policy Procyclical in Resource-Rich Countries?

Existing explanations of fiscal procyclicality rest largely on institutional weakness and borrowing constraints. This chapter argues that resource richness alters the potential influence of these factors on fiscal procyclicality. Resource richness may worsen already poor institutions; while simultaneously rendering borrowing constraints irrelevant in countries that use their resources to amass reserves in order to smooth spending *sans* borrowing.

Noting the potentially different role these two factors may play in resource-rich economies, the chapter then explores the empirical relationship between resource richness and fiscal proclicality. Ultimately, it documents a u-shaped relationship between resource-richness and fiscal procyclicality.That is, it provides evidence that as resource richness increases, fiscal procyclicality first declines, then bottoms out, then rises again. Along the way, the chapter also documents that the procyclicality-resource rich correlation is positive in OECD countries, while it is negative in non-OECD economies; and, it develops a model in keeping with the U-shaped relationship.

Again, I have a few questions and comments for the student to consider as the work evolves.

1. The approach rests on the (plausible, of course) assumptions that the OECD countries have better institutions and no borrowing constraints. What does the data described later in the chapter (bond ratings, etc.) say about these assumptions? Are they assumptions, or facts, or…?

2. A borrowing 'constraint' implies a discontinuity that doesn't seem to be captured in the chapter's measure. (At a minimum, there should be some justification, or discussion of the simplicity, robustness… of the bond rating transformations.)

3. The citations are somewhat loosely tied to the exposition. It would be useful to have clearer statements about the support offered by each paper that is cited. It is sometimes (for example in the first paragraph) precisely which statement is being supported by which citation. Relatedly, it is often unclear what type of support each citation provides – theoretical, empirical, or merely suggestive.

4. What is the actual incidence of government ownership of resources in the sample used? Relatedly, it would also be helpful to have a summary of how the data support the statements about government mineral revenues on page 65.

5. The focus of the chapter seems to be on expenditures, but fiscal policy includes government revenues as well. It would be interesting to see how the revenue results compare.

6. Some of the tables don't include quite enough information to know precisely what regression was run, and how we should interpret the magnitudes of the coefficients.

7. While Chile was not a member of the OECD during your sample, it is now; so, you might want to phrase your statement about Chile on page 67 somewhat differently.

8. While the model is in keeping with the empirical work, it doesn't guide it. As the research develops, it would be useful to have the empirical work more explicitly grounded by the model, stylized though it is.

9. It might be nice to tie both the empirical work and the model into the related literature on foreign exchange reserves and borrowing constraints.

Comments on Essay 3: Has Azerbaijan Been Able to Use Its Natural Resources to Outperform its Neighbors?

The chapter begins with a sketch of some of the economic changes that have occurred in Azerbaijan in the last couple of decades. It then provides some graphs, summary statistics, structural break tests and regressions that are useful in characterizing key data series for the Azerbaijan economy and comparing them with those of the Georgian and Armenian economies. The focus is on whether the timing of changes in the Azeri growth patters vis-à-vis the other two countries seems to coincide with key changes in the oil industry.

This chapter is less developed than the others. Its contribution is less clear, and the exposition is not of the same quality. More importantly, it's not clear what the contribution is meant to be. The chapter's introduction focuses on Dutch disease and on costly rent-seeking and conflict, but the chapter itself does not. While it's interesting to see how some of the key macroeconomic variables differ across the three economies, I'm ultimately not sure what to make of the 'horse race.'

To assess the role of Dutch disease (or of oil-related conflict) would require examining aspects of its transmission mechanism. That might entail examining such things as the behavior of relative prices or differential profits across sectors,

or the real exchange rate (or political instability). Sectoral differences are at the heart of Dutch disease, and these are not examined in this chapter. Instead, the chapter explores the timing of changes in the growth patterns. Whatever is going on to generate the changes in growth, meaningful insight requires some assessment of the mechanisms driving the changes.

If the student wants to pursue the question of the relevance of the Dutch disease for Aizerbaijan (and I can see that that's not quite the current objective), then it might be helpful to explore some other references. Papers by Égert and by Oomes and Kalcheva (IMF) seem closely related. At a minimum, the chapter requires a clearer elucidation of its contribution.