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STRUCTURAL BREAKS AND REAL CONVERGENCE IN OPEC COUNTRIES

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This article examines the real convergence hypothesis in OPEC countries (Algeria, Angola, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela) using time series techniques and allowing for structural breaks. The main results show lack of support for income convergence in OPEC countries. We only find evidence of catch-up with the U.S. economy for the case of Indonesia, and for Angola in the last years of the sample. These findings are in line with the "resource curse" literature, which suggests that natural resource dependence inhibits economic growth. Furthermore, the results suggest that the country's oil export dependence is negatively related with its per capita GDP growth rate.

JEL classification codes: C32; O41
Key words: real convergence; unit root tests; OPEC countries; structural breaks

I. Introduction

In recent years there has been an emerging body of empirical literature on convergence in per capita output across different economies. The interest on this subject may be explained, at least in part, as a test for the predictions of the neoclassical growth model (Solow 1956) as opposed to the "new" endogenous growth models (see, for example, Romer 1986 and Lucas 1988). As it is well known, the neoclassical model predicts (under some assumptions) that per capita output will converge to either the steady-state of the individual countries (conditional convergence) or to a common steady-state (unconditional convergence), regardless of initial per capita output

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levels. On the other hand, in endogenous growth models there is no tendency for income levels to converge, since divergence can be generated by relaxing some of the neoclassical assumptions (e.g., incorporating non convexities in the production function).

Furthermore, the great differences observed in per capita output and in growth rates across countries justify a deeper study on convergence. However, no attention has been paid to the OPEC experience in the large number of empirical papers that study convergence. The Organization of Petroleum Exporting Countries (OPEC) is currently a cartel of 12 countries, including Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.[1] OPEC nations still account for two-thirds of the world's oil reserves, and, as of March 2008, 35.6% of the world's oil production, which gives them considerable control over the global oil market.

Until World War II, the economic literature believed that natural resources were an important factor favoring economic growth, while recent evidence has found that countries rich in natural resources grow slower on average than natural resource poor countries (see, for example, Sala-i-Martin 1997; Sachs and Warner 1999, 2001; and Mehlum et al. 2006, among others). This article examines the real convergence hypothesis in 14 OPEC countries during the second half of the twentieth century. Although all the analyzed countries are rich in a natural resource, oil, there are great differences among them. First, among the 14 countries belonging to the OPEC, seven are located in Asia, five in Africa, and two in South America. Second, they joined the OPEC at very different times. Third, there is a wide variety in size. Fourth, there are great differences in the quotas of each of the countries (for example, Saudi Arabia produces 10,000 thousands of oil barrels per day while Ecuador only produces 500). Fifth, oil export dependency varies among the OPEC countries (for example, Qatar and Kuwait are the most oil dependent countries, with per capita net oil export revenues of U.S. $ 26,151 and 19,685 respectively, while Indonesia, Nigeria and Ecuador are the least dependent countries).

The evolution of oil prices in the last fifty years has been subject to many changes: after the 1973 and 1979 oil crisis, oil prices increased until the mid-80´s, and then they started to decrease. As shown in Table 1, average growth rates of the analyzed countries seem to be related to the evolution of oil prices. However, there has been

[1] In this paper, two former OPEC members are included, Gabon and Indonesia. Indonesia´s membership from OPEC was voluntarily suspended in 2008 as it became a net importer of oil. Gabon left the OPEC in 1994.