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Income inequality and the oil resource curse

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ABSTRACT

Surprisingly, there has been little research conducted about the cross-country relationship between oil dependence/abundance and income inequality. At the same time, there is some tentative evidence suggesting that oil rich nations tend to under-report data on income inequality, which can potentially influence the estimated empirical relationships between oil richness and income inequality. In this paper we contribute to the literature in a twofold manner. First, we explore in depth the empirical relationship between oil and income inequality by making use of the Standardized World Income Inequality Database – the most comprehensive dataset on income inequality providing comparable data for the broadest set of country-year observations. Second, this is the first study to our knowledge that adopts an empirical framework to examine whether oil rich nations tend to under-report data on income inequality and the possible implications thereof. We make use of Heckman selection models to validate the tendency of oil rich countries to under-report and correct for the bias that might arise as a result of this – we find that oil is associated with lower income inequality with the exception of the very oil-rich economies.

1. Introduction

In recent years there has been a fast expanding literature researching the links between resource abundance and several measures of economic performance. Much of the so-called *resource curse* literature has developed theoretical and empirical research explaining the negative correlation observed between several measures of mineral abundance and long-term economic growth (Andersen and Aslaksen, 2008; Arezki and van der Ploeg, 2010; Baggio and Papyrakis, 2010; Caselli and Cunnigham, 2009; Gylfason and Zoega, 2006; Kolstad, 2009; Murshed and Serino, 2011; Papyrakis and Gerlagh, 2004, 2007; Papyrakis, 2011, 2014; Sachs and Warner 1995, 1997, 1999a,b, 2001). Much of this literature (to which this paper belongs) pays particular attention to oil and its correlates (e.g. for the case of conflict, see Lujala, 2010; gender inequality, see Ross, 2008; bureaucratic efficiency, see Goldberg et al., 2008).

Several explanations of the underperformance of oil rich economies have been provided in the literature. A first stream of the literature has focused on political economy explanations associating oil with the presence of inferior institutions and rent-seeking competition (Bjorvatn and Naghavi, 2011; Bjorvatn and Selvik, 2008; Bulte et al., 2005; Dalmazzo and De Blasio, 2003; Papyrakis et al., 2016; Torvik, 2002; Wick and Bulte, 2006). Competition for natural resource rents might also link to violent conflict, particularly in the case of ethnically fragmented societies (see Brunnschweiler and Bulte, 2009; Dixon,

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2009; Olsson, 2007). A second branch of the literature looks at *Dutch Disease* explanations of poor economic performance (Beine et al., 2012; Cherif, 2013; Corden, 1984; Corden and Neary, 1982; Pegg, 2010; Papyrakis and Raveh, 2014; Torvik, 2002). In this context, mineral exports can be associated with both a relocation of production factors from various sectors towards the mineral sector as a result of wage premia in the latter (i.e. the so-called resource movement effect), as well as inflationary pressures and loss of competitiveness in exporting industries (i.e. the so-called spending effect).

While the resource curse literature initially focused attention on economic growth, it gradually broadened its scope to other development variables. For example, Bulte et al. (2005) and Daniele (2011) demonstrated that mineral resource dependence is associated with lower values of the *Human Development Index* (a composite development index of life expectancy, education and GDP per capita), undernourishment, higher child mortality and limited access to safe water. Ross (2008) claimed that oil dependence is associated with gender inequality measured by reduced female political representation and labor participation. Mineral-rich countries are also expected to be characterized by lower genuine savings (i.e. net total investment in physical, natural and human capital), that is often used as a measure of long-term (weak) sustainability (assuming that different forms of capital are perfectly substitutable, see Atkinson and Hamilton, 2003; Boos and Holm-Müller, 2012; Dietz and Neumayer, 2007). There is also some tentative evidence of a poor empirical track record of poverty alleviation in mineral dependent economies (see Pegg, 2006).

Surprisingly, though, there has been little research conducted about the relationship between oil dependence/abundance and income inequality. Oil rents can, in principle, link to lower income inequality if they encourage redistribution that favors low-income groups. On the other hand, they might relate to greater income inequality if they become concentrated in the hands of political elites or geographical regions (we expand on this further in Section 2). In this paper we contribute to this strand of the literature in a twofold manner. First, we explore in depth the empirical relationship between oil abundance/dependence and income inequality by making use of the Standardized World Income Inequality Database (SWIID) developed by Solt (2009). This is the most comprehensive dataset on income inequality providing comparable data for the broadest set of country-year observations. While our primary focus is to shed light on the links between oil and income inequality, our empirical specifications also control for other variables that have been found to influence income inequality in the literature. Second, this is the first study to our knowledge that adopts an empirical framework to examine whether oil rich nations tend to under-report data on income inequality and the possible implications thereof. We make use of Heckman selection models to validate the tendency of oil rich countries to under-report and correct for the bias that might arise as a result of this – we find that oil is associated with lower income inequality with the exception of the very oil-dependent economies.

The next section is devoted to the theoretical mechanisms that link income inequality to the presence of oil, as well as other possible explanatory factors. In the same section, we also discuss how oil dependence/abundance and other factors can influence the reporting behaviour of countries (regarding data on income inequality). The theoretical section will provide the justification behind the empirical specifications that are tested in subsequent sections. Section 3 presents our empirical analysis on income inequality and oil abundance. Section 4 focuses on the under-reporting behaviour of oil rich nations and presents a series of Heckman selection models that allow to correct for the bias that might arise from such under-reporting. Section 5 concludes.

2. Oil and inequality: transmission channels

In this section we discuss the theoretical mechanisms that are likely to link income inequality to the presence of oil, as well as other possible explanatory factors. We also comment on how these variables may not only relate to the level of income inequality, but also to the reporting of income inequality. The theoretical mechanisms presented will then shape the specifications that will be empirically tested in Sections 3 and 4 of the paper.

2.1. Oil

Oil rents may, in principle, be associated with lower income inequality if the revenues become redistributed equitably and possibly target lower income groups. On the other hand, an expansive oil sector may relate to greater income inequality by reducing production in the non-oil economy via Dutch Disease effects, by inducing rent-seeking behaviour and disproportionately benefiting specific interest groups (particularly in ethnically fragmented societies, see Fum and Hodler, 2010) and/or disadvantaging the oil-scarce regions within the country (Ross, 2007). Gylfason and Zoega (2003) mention that resource abundance may correlate positively with income inequality when the distribution of natural capital is more unequal compared to other forms of capital in the economy. In an earlier paper, Leamer et al. (1999) suggest that the availability of natural resources (primarily land) relates to lower human capital accumulation, a diversion of physical capital away from manufacturing and higher levels of income inequality.

Ross (2007) claims that the Gini coefficient (the typical measure of income inequality) tends to be uncorrelated with mineral dependence, although he acknowledges that this might be driven by a sample bias. He claims that mineral rich nations tend to under-report data on income inequality, which can potentially influence the estimated empirical relationships between mineral dependence and income inequality (Ross, 2007). Williams (2011) suggests that governments in oil rich countries generally lack transparency and are reluctant to reveal sensitive information related to income inequality. Several other papers in the literature also suggest that oil-rich countries suffer from limited transparency (e.g. in terms of