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Oil and entrepreneurship

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HIGHLIGHTS

- Profits from oil and gas have positive and negative impacts on entrepreneurship.
- This study explains these impacts and provides empirical evidence on them.
- It uses Global Entrepreneurship Monitor and WB Subsoil and Forest rents datasets.
- It employs a dynamic panel data estimation with country fixed effects.
- It shows that the negative impact dominates as corruption and oil and gas rents increase.

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ABSTRACT

Economic theory predicts that rents produced from natural resources, especially oil and gas, can increase opportunities for entrepreneurship, but they may also reduce engagement in entrepreneurial activities as they change incentives towards rent-seeking. Using Global Entrepreneurship Monitor (GEM) annual surveys, this study provides empirical evidence that more per capita profit from oil and gas reduces entrepreneurship only in corrupt environments. The more the corruption is, the larger is the impact. The results have important implications for policy makers, especially in resource rich developing countries.

1. Introduction

Countries whose oil, gas, or other natural resources make up a large portion of their economy are affected by both positive and negative consequences of these valuable commodities.[1] One potential impact of such resources is on entrepreneurship and through two mechanisms. The first mechanism is that oil and gas rents offer new business opportunities for entrepreneurs that did not exist before through creating a new industry (oil and gas) and its supply chain, as well as increasing disposable income which leads to higher demand for products and services. Hence, they boost entrepreneurship.[2] At the same time, however, a second mechanism turns on which creates disincentives for productive entrepreneurial activity. Profits from oil and gas rents reach the government coffers – through taxes, or direct revenues from ownership of these resources. Potential entrepreneurs may see the opportunity to connect themselves to the government in various ways in order to exploit these oil and gas rents. In other words, profits from resource extraction in the hands of the government create incentives for potential entrepreneurs to engage in rent-seeking activities and dissuade them from participating in productive entrepreneurship (Kolstad and Wiig, 2009; Tornell and Lane, 1999; Torvik, 2002; Mehlum et al., 2006; Robinson et al., 2006; Hodler, 2006).

These two mechanisms have significant ramifications for the economy, especially the growth rate, entrepreneurship, and institutionalization of corruption. When profit from resource extraction becomes substantial, more people engage in rent-seeking activities rather than entrepreneurship, especially that most business opportunities have been already exploited. Therefore, the second mechanism may overcome the first one as oil and gas profits increase, especially in a corrupt environment.

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[1] For a review of this literature, please see van der Ploeg (2011).
[2] For example, see Okkonen and Suhonen (2010) and (2013) for examples.

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Using a unique dataset on entrepreneurship, which covers 80 countries around the world and over time, this study offers the first empirical evidence verifying this non-linear relationship between oil and gas profits, and entrepreneurship. Using Arellano-Bond estimator to correct for endogeneity from lagged values of entrepreneurship and country fixed effects (Arellano and Bond, 1991), and controlling for lagged values of per capita GDP, a very important predictor of entrepreneurial activity across countries, this paper shows that as profit from oil and gas increases, productive entrepreneurship decreases, since rent seeking activities overcome benefits of these profits. It also shows that the reduction in entrepreneurship only exists in corrupt environments and more corruption exacerbates the negative impact of oil and gas profits.

The rest of this paper is constructed as follows: Section 2 discusses the theory that relates oil rents to entrepreneurship. In Section 3, the datasets used in this paper are explained. Section 4 provides the estimation strategy and the results. Section 5 is the conclusion which discusses implications for policy and research.

2. The impact of oil and gas rents on entrepreneurship in theory

An entrepreneur can be defined, simply, as one who is willing to take risk in order to implement a venture. Not surprisingly, Schumpeter considered an entrepreneur as a "sociologically distinct individual" (McDaniel and Bruce, 2005; Schumpeter 1934; see Thompson (2004), for supporting evidence.) Similarly, it is argued in the literature that there are traits and characteristics required in a person to make her an entrepreneur: for example, an insatiable need for achievement (Bygrave, 1989; McClelland, 1961), an internal locus of control which is the belief that the outcomes are mostly dependent upon one's own actions (Bygrave, 1989), alertness to opportunities (Kirzner, 1973, 1979), risk-taking (Bygrave, 1989; McClelland, 1961; Shane, 2004), boldness, daring, and creativity (Lumpkin and Dess, 1996; Hills et al., 1999), overconfidence (Forbes 2005; Shane, 2004), and stress tolerance (Rauch and Frese, 2007). Thompson (2004) identifies six key entrepreneurial character themes, or natural and instinctive behaviors, and argues that techniques may help people to implement ideas, "but alone they cannot compensate for missing characteristics".[3] Moreover, evidence shows inherent personal characteristics affect career choice towards self-employment (Carter et al., 2003; Lüthje and Franke, 2003). Cope (2005) argues that these are all innate abilities and permanent characteristics that evolve little over time and context. These abilities and characteristics are not found in everyone but there is a relatively fixed share of every society with these traits and characteristics who can be potential entrepreneurs. This fact is used to develop the theory in this study.

Baumol (1990) argues that potential entrepreneurs can engage in two activities: (1) 'productive entrepreneurship': that is creating and selling products and services that are valued in the marketplace, and (2) rent-seeking or what he calls 'unproductive entrepreneurship': that is creating connections with sources of rent, and competing to capture more of the rent in the economy.[4] 'Productive entrepreneurship' is the growth enhancing form of entrepreneurship. It is what widely referred to as entrepreneurship, although rent seeking is also an activity potential entrepreneurs can engage in. Rent seeking is possible when there are

[3] For more studies, see Puga and Garcia (2012).

[4] Baumol (1990) also discusses 'destructive entrepreneurship'. In this form of entrepreneurship, the entrepreneur takes advantage of opportunities to engage in pillaging, confiscation, and other expropriation activities that are destructive to the economy but profitable to the entrepreneur.

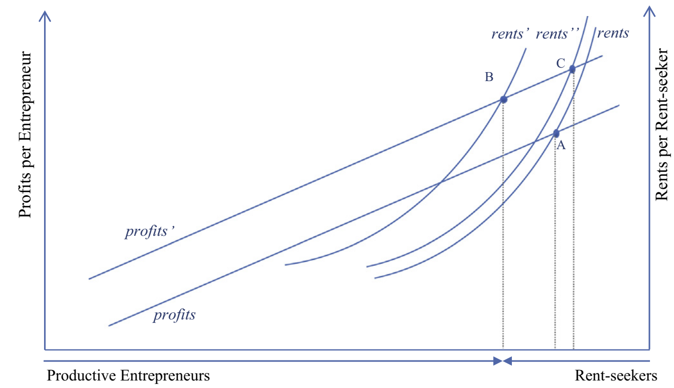

Fig. 1. Productive Entrepreneurship and Rent-Seeking. Note: The profits curve shows that the larger are the profits, more people engage in productive activities. On the other hand, the total rent in the economy is fixed. The *rents* curves show that as more people engage in rent-seeking, each will end up with a smaller share. The equilibrium happens when the average profits are the same as the average rent, i.e. where the two lines cross. As rents increase, the *rents* curve shifts to the left and with it the equilibrium. Hence, it decreases the number of productive entrepreneurs. van der Ploeg (2011), based on Mehlum et al. (2006).

rents available in the economy and particularly when rents are concentrated in a few sources that are prone to corruption, like the government (for example, when government enjoys sizable profits from owning or taxing natural resources.).

The potential entrepreneurs choose between these two activities (entrepreneurship and rent seeking) based on the structure of returns from them.[5] Fig. 1 shows the two entrepreneurial activities graphically. The horizontal axis represents the number of potential entrepreneurs. They can participate in productive or rent-seeking activities. As more of them choose productive activity, fewer will be rent-seekers. The vertical axis on the left shows profits per entrepreneur. The number of potential entrepreneurs who choose productive activity depends on the profits earned from it. The larger are the profits per entrepreneur, the more people will engage in productive activities. It is the simple law of supply and is clear from the profits lines that are upward-sloping.

On the other hand, the total rent in the economy is fixed. So if more people engage in rent-seeking, each ends up with a smaller share (i.e. smaller rent). The *rents* curves demonstrate such phenomenon. The vertical axis on the right denotes rent per rent-seeker. The more people become rent-seekers, the smaller will be the average rent that each receives (rent per rent-seeker). The potential entrepreneur chooses productive activities if the average profits (profits per entrepreneur) is larger than the average rents. Therefore, the equilibrium number of entrepreneurs and rent-seekers happens when the average profits are the same as the average rent. This is where no one wants to switch from being a productive entrepreneur to a rent-seeker and vice versa.

When there is no natural resource in the economy, there is still opportunity for rent grabbing for example via legal loopholes, or connections with the government. In this situation, the rent curve showing rent per rent-seeker is represented by the *rents* curve in Fig. 1 and the supply curve for the entrepreneurs is depicted by the *profits* curve. The equilibrium, when no natural resource is in the economy, is point A on the graph.

As soon as a valuable natural resource is discovered, it provides many new opportunities for entrepreneurs, since it leads to creation of a new industry (resource extraction) with all its supply chain. This leads to a substantial hike in expected profits for

[5] Of course, some entrepreneurs engage in a mix of productive and rent-seeking endeavors. But, this does not affect the spirit and result of the theory that follows.