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Living in the Garden of Eden: Mineral resources and preferences for redistribution

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ABSTRACT

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This paper provides empirical evidence that mineral resources abundance is associated to preferences for redistribution in the United States. We show that individuals living in states with large mineral resources endowment are more opposed to redistribution than others. We take advantage of both the spatial and the temporal distributions of mineral resources discoveries since 1800 to uncover two mechanisms through which mineral resources can foster ones' opposition to redistribution: either by transmission of values formed in the past, or by the exposure to mineral discoveries during individuals life-time. We show that both mechanisms matter to explain respondents' preferences. *Journal of Comparative Economics* **43** (2) (2015) 243–256. University of Lausanne, Quartier UNIL-Dorigny, Bâtiment Extranef, 1015 Lausanne, Switzerland; Aix-Marseille Univ. (Aix-Marseille School of Economics), CNRS & EHESS, France[1].

1. Introduction

Beliefs and values have gained much attention as determinants of economic outcomes (see Fernández (2011) for a review). However, the question of values' origin is still under scrutiny by the empirical literature. This paper focuses on the United States and provides evidence that mineral resources abundance is associated with lower support for redistribution.

We take advantage of geo-referenced information on mineral resources' discoveries in United States over the 1800–2000 period. We observe the effects of both the spatial and temporal differences in the distribution of mineral discoveries across states and time on individuals' preferences for redistribution. Our measure of such preferences is the first principal component of answers on two questions of the General Social Survey that capture support for individual responsibility and sympathy for income inequality.

We show that individuals living in states with large mineral resources endowment are more opposed to redistribution than others. We undertake various tests and strategies to demonstrate the robustness of this result. We then

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examine how an individual acquires such values. We highlight two mechanisms through which mineral resources can foster ones' opposition to redistribution: either by transmission of values formed in the past, or by the exposure to mineral discoveries during individuals' life-time. We show that both mechanisms matter to explain respondents' preferences.

A history of American mining, written by Rickard (1932), illustrates the extent to which mining is associated with the concept of individuals' self-responsibility in the American tradition. This book has been written "to give [...] something of that background the older men built up as they went along". The introduction argues that "in developing the mineral wealth of a continent [...] things do not "just happen"; they are brought about by men who have the wit to see and the courage to do. Our predecessors were men with these qualities. They [...] have left us a great heritage".[2] This heritage is made of values such as individual responsibility that are deeply associated with mining activity. This is mostly the case because of the technical methods used in the early times of mining in the Unites States. As documented by Freudenburg and Frickel (1994), "mining operations and technologies were small-scale, and [...] capital requirements were minimal". These operations could often be implemented by a single man.[3] Mining was more labor-rather than capital-intensive.[4]

The positive association between mineral resources and opposition to collective redistribution that we uncover in this paper could be explained by some income effect. Natural resources create wealth opportunities that can benefit to local residents if they provide sufficient efforts. This windfall induced by natural resources can be related to the well-known effect of income on the demand for redistribution à *la* Romer (1975), Meltzer and Richard (1981), and Piketty (1995): increasing income is associated with less willingness to redistribute. This association is stronger the larger the efforts made to obtain this increasing income. This mechanism has been documented by Alesina and La Ferrara (2005), Alesina and Angeletos (2005), and Alesina and Giuliano (2011) among others. These scholars describe the genesis of values that may be transmitted between individuals and generations. However, a key feature of this paper is that our empirical results persist when various measure of individual and collective income are taken into account. This suggests that mineral resources are also associated with particular characteristics that go beyond their transaction value. Among these characteristics, it is worth noting the role of effort in the exploitation of mineral resources as suggested by the narrative of American mining history. The role of effort is also a dimension that distinguishes our finding on mineral resources from those of other scholars about the relationship between taste for redistribution or collectivism and oil revenues (Di Tella et al., 2010) or agricultural shocks (Davis, 2014).

As Bisin and Verdier (2001), the literature points out two main mechanisms through which values are formed at the individual level. First, values can be inherited through family transmission of traits. Second, values can be shaped through the socialization process: individuals interact with others and mix their traits. The first process refers to transmission, whereas the second concerns the context in which individuals evolve. We take inspiration from this approach to study how mineral resources discoveries can affect values held by respondents. We also consider two mechanisms. The first mechanism is linked to the question of transmission and persistence of beliefs. It occurs within society, across and within generations. In other words, values are inherited from the family or from others and transmitted over time in a given group. We refer to this mechanism as the *transmission* mechanism.[5] The second mechanism is linked to the immediate effect of mineral resources discoveries have on preferences for redistribution. Values depend on events that happened during the life of an individual. Hence, "shocks" on mineral resources abundance are likely to directly shape the values held by individuals if they have been exposed to these shocks. In what follows, we refer to this mechanism as the *exposure* mechanism.

A contribution of this paper is to disentangle the existence and the relative importance of these two mechanisms for the main relationship described above. We do so by isolating individuals that are likely to have been exposed to mineral resources discoveries in the state where they live over their life-time. These respondents appear to be more opposed to redistribution than those who did not have such experiences but live in states with lots of mineral resources. The latter are themselves more opposed to redistribution than those living in states with low mineral resources endowment. This result allows us to show that both mechanisms matter. A back-of-the-envelope calculation leads to the following conclusion: the exposure mechanism accounts for about 35% of the overall difference in preferences for redistribution between mineral and non-mineral states (the remaining 65% are accounted for by the transmission mechanism).

Our results mean that mineral resources have an effect on attitudes. Diamond (2006) highlights the interplay between the abundance of natural resources and individual orientations thanks to the case study of Montana. He claims that natural

[2] Rickard (1932), page ix. See the Online Appendix for some additional quotes from this book.

[3] According to Braunstein (1985), mining has quickly turned into an activity run by large corporations. A recent paper by Glaeser et al. (forthcoming) builds on this observation and document a negative relationship between large-scale historical mining and today's entrepreneurship across American cities. Yet, the myth of the single gold miner still persisted despite subsequent technological transformations of the mining industry.

[4] This feature also translates into unionization patterns. According to numbers from Friedman (1999), the mining industry was the second most unionized industry in the United States in 1880 (the unionization rate in mining industry was 11.35%, just below the unionization rate in printing industry that was equal to 11.70%). This fact should however not be over-interpreted since unionization may reflect either general political orientations or a local protection behavior. See Riley (1997), Schnabel (2003), and Schnabel and Wagner (2007) for developments of this issue. Todays unionization rate in mining industry is roughly equal to the average unionization rate in the American economy according to the Bureau of Labor Statistics.

[5] This mechanism is close to the "direct vertical socialization" proposed by Bisin and Verdier (2008) but where the cultural transmission is done within the family. Note that the transmission of cultural traits may be implicit or explicit. The latter case can be illustrated by the already mentioned book *A history of American mining* (Rickard, 1932).