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Resource discovery and the politics of fiscal decentralization[☆]

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ABSTRACT

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If the central government is a revenue maximizing Leviathan then resource discovery and democratization should have discernible impacts on the degree of fiscal decentralization. We systematically explore these effects by exploiting exogenous variation in giant oil and mineral discoveries and permanent democratization. Using a global dataset of 77 countries over the period 1970–2012 we find that resource discovery has very little effect on revenue decentralization but induces expenditure centralization. Oil discovery appears to be the main driver of centralization and not minerals. Resource discovery leads to centralization in locations which have not experienced permanent democratization. Tax and intergovernmental transfers respond most to resource discovery shocks and democratization whereas own source revenue, property tax, educational expenditure, and health expenditure do not seem to be affected. Higher resource rent leads to more centralization and the effect is moderated by democratization. *Journal of Comparative Economics* **000** (2017) 1–17. Department of Economics, University of Sussex, United Kingdom; Research Department, IMF.

1. Introduction

Haggling over a fair share of tax revenue between the central and the provincial governments is often an integral part of the political theatre in many countries. Natural resource revenue for its part plays a crucial role in influencing the politics of revenue sharing. Whether the issue at hand is fiscal federalism or autonomy or secession, the geographic location and the distribution of natural resource revenue seems to play a role. For example, the discovery of North Sea oil off the coast of Scotland has underpinned the Scottish case for sovereignty since the 1970s. North Sea oil was an integral part of the political discourse on either side of the Scottish independence referendum debate in the UK in 2015.[1] The same could also be said about the secession movement of the three mini Indian states of Jharkhand, Chhattisgarh and Uttarakhand. These three mini

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[1] On 25 August 2015 Venessa Barford of the BBC writes in her article entitled *Scottish Independence: Five Unresolved Questions* for the BBC Online, "North Sea oil and gas reserves are another matter of much dispute. Mr Salmond says an independent Scotland would earmark a tenth of revenues - which the Yes campaign puts at about £1bn a year - to form a Norwegian-style sovereign wealth fund, creating a £30bn pot over a generation. Prime Minister David

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states split from the three large states of Bihar, Madhya Pradesh, and Uttar Pradesh respectively in the year 2000 and they also happen to be endowed with one of the largest mineral deposits in the country. Bolivian indigenous communities of the Aymaras and the Quechuas not receiving a fair share of the natural gas revenue sparked mass protests and political instability in the country which led to the nationalisation of gas fields in 2005.

In spite of the potential connections, research on the interrelationship between natural resources and fiscal decentralization remain rare. Standard models of fiscal decentralization assume benevolent governments at the central and regional levels (see Alesina and Spolaore, 1997; Oates, 1999; and Besley and Coate, 2003). They maximize the sum of utilities of residents in their jurisdiction and provide local public goods. Therefore, there is merit in fiscal decentralization or centralization depending on the nature of externality that the provision of local public goods generates for other regions in the country. Alternatively, another class of models view fiscal decentralization from a 'Neo-Hobbesian' perspective whereby the central government is a revenue maximizing Leviathan only constrained by the constitution and bottom-up democratic pressure via the regional governments (Brennan and Buchanan, 1977). Under both of these approaches, one would expect the spatial distribution of natural resources and the quality of political institutions to matter by influencing the power relationship between the central and the regional governments. In particular, a revenue maximising Leviathan in the form of the central government is always expected to prefer fiscal centralization. However, their ability to achieve fiscal centralization could be constrained by democratic pressure and the capacity to tax. In spite of the potential connections, studying the effects of natural resources and political institutions on fiscal decentralization remains on the periphery of this literature.

In this paper we aim to systematically explore the causal effect of natural resources on fiscal decentralization and how the quality of political institutions affects this relationship. In particular, we exploit the exogenous variation in giant and supergiant discoveries in oil, gas and mineral reserves to set up a quasi-natural experiment to identify the effect of natural resources on fiscal decentralization. The effect of resource discovery as an exogenous news shock is analysed using a global dataset covering up to 77 countries over the period 1970–2012. Furthermore, the paper also estimates the effect of resource rent on fiscal decentralization.

The paper makes the following contributions. First, establishing causality is the main motivation in this literature and the paper presents a strategy to achieve that objective by using the exogenous news shock of resource discovery as an identifier. Second, the paper uses a novel geocoded dataset on resource discovery. In particular, the dataset is able to distinguish between minerals[2] and oil discoveries. Third, the paper analyses the effect of resource discovery on the politics of fiscal decentralization. In particular, it explores how democratization influences the relationship between resource discovery and fiscal decentralization.

There is no obvious prior when it comes to the effect of natural resources on fiscal decentralization. On the one hand resource discovery could embolden a central government who is acting as a revenue maximizing Leviathan to act far more unilaterally and centralize fiscal affairs. On the other hand resource discovery could also incentivize the central government to decentralize in order to either expand political patronage or improve the efficiency of public spending by addressing the preference matching problem.[3] Therefore, the lack of a strong prior either way makes this a valid empirical question. Estimating a model controlling for country specific unobserved heterogeneity and trends, time varying common shocks, discovery history in the previous decade, GDP per capita, and heterogeneity in the measurement of fiscal decentralization we find that resource discovery (both oil and minerals) has very little effect on fiscal decentralization from the revenue side. However, the former appears to induce centralization on the expenditure side and the effect seems to be driven by oil discovery and not minerals. The intertemporal effect of resource discovery on revenue decentralization (measured by revenue share) appears to be statistically insignificant both 10 years pre-and-post discovery. However on the expenditure side we find evidence of expenditure concentration up to 6 years post discovery. We also document that permanent democratization and the quality of political institutions have a differential impact on the effect of resource discovery on fiscal decentralization. In particular, we find that resource discovery leads to fiscal centralization in locations which have not experienced permanent democratic transition. This effect is primarily driven by oil discovery. We note similar but statistically insignificant trends with mineral discovery. Which fiscal institutions respond most to the resource discovery news shock and democratization? We find that tax and intergovernmental transfers respond most to the shocks of resource discovery and democratization. The institutions of own source revenue, property tax, educational expenditure, and health expenditure do not seem to be significantly affected. The discovery news shock might affect government revenue and spending through expectations but any direct effects on revenue collection have to wait till the start of production. This is after accounting for the possibility of debt overhang as central governments can borrow post discovery. The marginal impact of resource rent could be much more immediate and direct. Using both the standard fixed effects model and the instrumental variable (IV) method we find higher resource rent leads to more fiscal centralization and the effect is moderated by permanent democratization. This pattern is observed for both oil and mineral rents even though the effect is albeit weak for the latter.

Cameron says the North Sea has been a British success story – and now oil and gas are getting harder to recover it's important to back the industry with the "broad shoulders" of the UK."

[2] The minerals are gold, silver, platinum group elements (PGE), copper, nickel, zinc, lead, cobalt, molybdenum, tungsten, uranium oxide.

[3] The preference matching problem refers to the mismatch in preference between the local population and the rest of the country with regards to public spending and revenue collection.