

Do natural resource windfalls increase the risk of armed conflict within a country?

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investigate the impact of giant oilfield discoveries on the likelihood of civil conflict.

Giant oilfields and civil conflict



Ancedotal evidence from Angola, Iraq and Nigeria suggests that discoveries of natural resource wealth in a country can make civil conflict more likely. What's more, recent research (for example, Besley and Persson, 2011) has shed light on the mechanisms underlying some of these conflicts over resources. But as the examples of Brazil, Canada and Norway demonstrate, not *all* oil-rich countries experience internal conflicts.

Careful surveys of research on conflicts and natural resources (for example, Ross, 2006, and Blattman and Miguel, 2010) show how difficult it has been to quantify the effect of oil on armed conflict in all but a handful of countries. The goal of our research is to examine whether giant oilfield discoveries really do fuel internal armed conflicts around the world – and if so, in which settings.

To investigate this question, we would ideally want oil windfalls to appear as if in a randomised controlled trial. But in reality, of course, oil-rich countries differ from oil-scarce ones in ways that are difficult to observe and measure. Using data over time to control for fixed differences across countries is not straightforward either, because both the amount of oil extracted and its price may themselves respond to conflict.

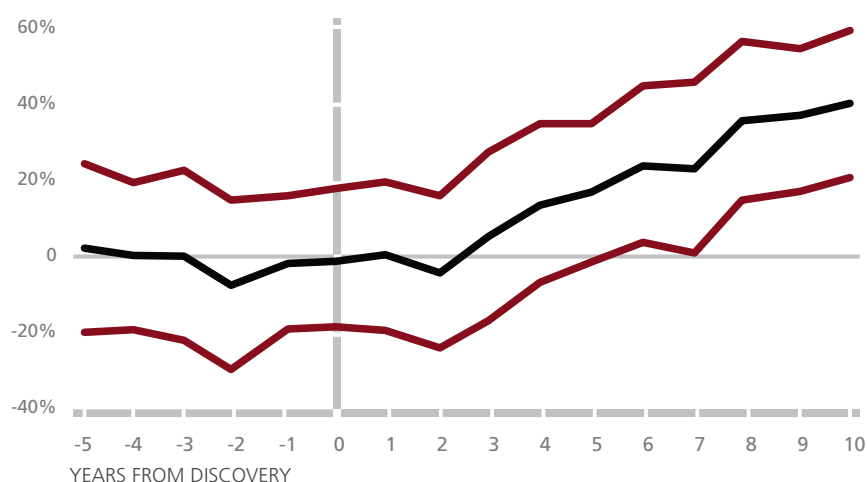
To overcome this challenge, we focus on the discovery of giant oilfields (and natural gas reserves) since the Second World War, each of which contained recoverable reserves of 500 million barrels equivalent or more before extraction began. As we discuss below, we find evidence that the timing of these discoveries is largely down to chance, so we can interpret the events that follow them as the causal effects of the discoveries.

Our first finding is that, on average, oil production increases by about 35-50% within a few years of a giant discovery. Giant oilfield discoveries also increase oil exports by about 20-50% within just a few years (see Figure 1).

We also find that, on average, giant oilfield discoveries increase the incidence of internal armed conflicts by about 5-8 percentage points within four to eight years of discovery, compared with a baseline probability of about 10% (see Figure 2).

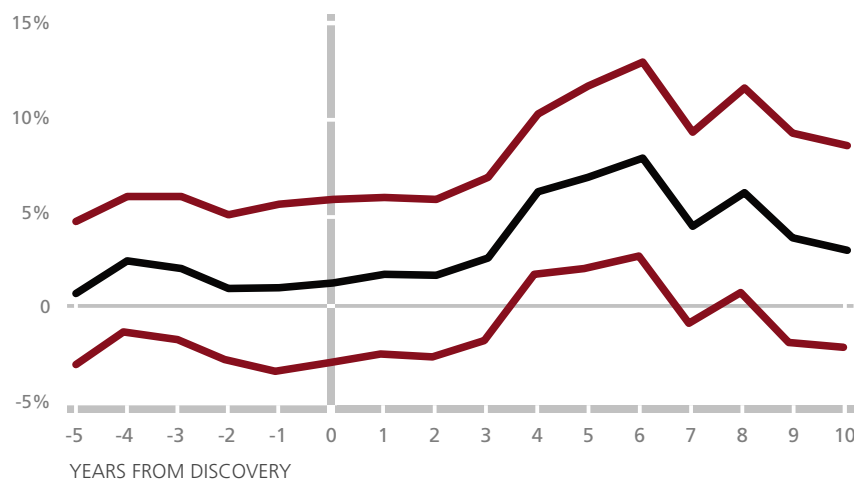
Giant oilfield discoveries, which are largely down to chance, significantly increase the risk of civil conflict

Figure 1: The effect of giant oilfield discoveries on per capita oil exports



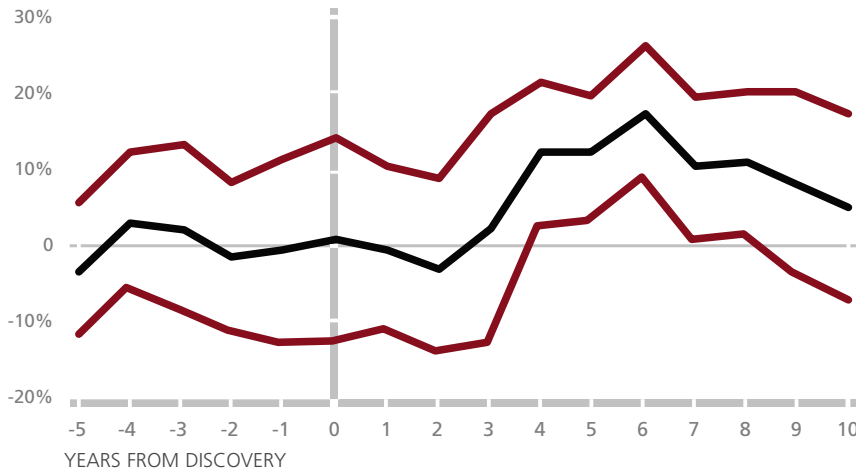
Note: Point estimates in black and 95% confidence intervals in red.

Figure 2: The effect of giant oilfield discoveries on the incidence of internal armed conflicts



Note: Point estimates in black and 95% confidence intervals in red.

Figure 3:
The effect of giant oilfield discoveries on the incidence of internal armed conflicts in countries with at least one internal armed conflict in the previous decade



Note: Point estimates in black and 95% confidence intervals in red.

The discovery of giant oilfields is especially likely to fuel internal conflicts in countries with recent histories of political violence. For example, giant oilfield discoveries increase the incidence of internal armed conflict by about 11-18 percentage points (compared with a baseline probability of about 37-39%) when a country experienced at least one such conflict in the decade prior to discovery (see Figure 3).

Similarly, the effect of discovery on the incidence of internal armed conflict is 11-14 percentage points (compared with a baseline probability of about 19-20%) in countries that experienced at least one coup in the decade prior to discovery. By contrast, in countries that experienced no internal conflicts or coups in the decade before a discovery, there is no significant effect of giant oilfield discoveries on the incidence of internal armed conflicts.

Turning to the effect of giant oilfield discoveries on economic outcomes, we find that GDP per capita and government spending either increased modestly or remained unchanged within the decade following a giant oilfield discovery. Our evidence also suggests that such discoveries did not affect private

consumption or investment. In other words, most residents gained little, if anything, from the discoveries.

If we could be confident that the timing of giant oilfield discoveries within countries is random, then we could interpret what follows them as the causal effect of these discoveries. While we recognise that the search effort is not completely random, we argue that the precise timing of discoveries within each country is largely a matter of chance.

To see why, consider how important giant oilfields are as a global source of oil and natural gas. These giants account for over 40% of the world's oil and natural gas reserves, so their discoveries are economically significant events. If a country or a firm could be fairly certain that a search will turn up a giant oilfield, then they will probably conduct the search.

But in fact, giant oilfield discoveries are very rare. Averaging across all the countries in the world, the odds of a giant discovery in a given year is less than one-in-twenty. The fact that these events are

so rare suggests that even when search effort is involved, the precise timing is due less to planning than to chance.

Our research provides additional evidence that addresses some potential concerns about the timing of the discoveries, and supports our interpretation that it is plausible to think that timing is random.

First, we address the concern that the discoveries may have resulted from economic or political changes that preceded them. We find no evidence of significant economic or political changes in the five years leading up to giant oilfield discoveries or in the year of discovery itself. We also test whether discoveries follow lulls in prior conflicts, and find no evidence to support this hypothesis.

Second, we tackle the concern that finding one giant oilfield may lead to finding another one nearby. While it is true that giant oilfield discoveries in a

Conflict over oil is especially likely in countries with recent histories of political violence

country's recent past increase the odds that it finds one in a given year, controlling for these past discoveries leaves the findings essentially unchanged.

Our results are also robust to excluding observations within a decade or less of previous giant discoveries. Observations with giant oilfield discoveries account for only about 1% of the remaining sample, making them especially difficult to anticipate.

Third, we address concerns that economic or political conditions shortly before discovery may affect our estimates, by showing that our results are robust to controlling for institutional quality and aggregate private investment.

Finally, we tackle the concern that observations with oil discoveries are different from others in ways that are difficult to measure directly. To do so, we compare the effect of giant oilfield discoveries with the effect of smaller

oilfield discoveries, and find that our results still hold.

Our finding that giant oilfield discoveries fuel internal conflicts in countries prone to violence has important implications for policy. For example, those who strive to reduce armed conflict should be concerned about the windfalls from oil that incumbent governments obtain in conflict-prone areas, especially if those windfalls encourage challenges to the incumbent's power.

At the same time, the firms that prospect for oil in conflict-prone areas and those who regulate them ought to be concerned about negative consequences for many local people. Locals often have little to gain from giant oilfield discoveries but may suffer enormously from conflicts over the oil.

This article summarises 'Do Giant Oilfield Discoveries Fuel Internal Armed Conflicts?' by Yu-Hsiang Lei and Guy Michaels, CEP Discussion Paper No. 1089 (<http://cep.lse.ac.uk/pubs/download/dp1089.pdf>).

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Further reading

Timothy Besley and Torsten Persson (2011) 'The Logic of Political Violence', *Quarterly Journal of Economics* 126(3): 1411-45

Christopher Blattman and Edward Miguel (2010) 'Civil War', *Journal of Economic Literature* 48(1): 3-57

Michael Ross (2006) 'A Closer Look at Oil, Diamonds, and Civil War', *Annual Review of Political Science* 9: 265-300



In conflict-prone areas, windfalls from oil discoveries may well encourage challenges to the incumbent government's power