

Natural Resource Discoveries, Citizen Expectations and Household Decisions

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Abstract

Major oil and gas discoveries are often associated with excitement and jubilation among citizens and government officials. But the extent to which discoveries substantially alter citizen expectations about economic conditions in a country remains an open question. The paper combines Afrobarometer data on household expectations on economic conditions and living standards with the announcement of oil and gas discoveries in Africa to estimate the effect of discoveries on expectations. The identification strategy exploits plausibly exogenous variation in the timing of

discoveries relative to the rollout of survey interviews. The study find that discoveries increase expectations of better economic conditions and living standards by 35 and 52 percent respectively. Further, the paper finds that the overall expectations boom effect pertains only to countries with weaker institutions. The paper also provides evidence that households incorporate these expectations into their migration and fertility decisions, with fewer applications in the short run to the U.S. green card lottery and increased childbirth following discovery announcements.

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Natural Resource Discoveries, Citizen Expectations and Household Decisions^{*}

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1 Introduction

*Even without oil, we are doing so well...
With oil as a shot in the arm, we're going
to fly.*

J.A. Kufour

President of Ghana (2000-2008)

Natural resource discoveries are often associated with excitement and jubilation among citizens and government officials.¹ This exuberance stems from the expectation that windfalls from resource extraction might bring a significant shift in the economic trajectory of their economies. Recent research however suggests that in some countries expectations can overshoot the benefits subsequently felt, coinciding with growth disappointments, a phenomenon known as the “presource curse” (Cust and Mihalyi, 2017a). Various authors propose mechanisms whereby overly optimistic expectations about future rents, triggered by announcements of major resource discoveries, may induce governments to embark on unplanned spending including through excessive borrowing (Mansoorian, 1991; Arezki et al., 2017; Collier, 2017). Meanwhile, factors such as delays in production and commodity price falls might push the economy into a path of crisis before production even begins (Cust and Mihalyi, 2017b).

This raises two important policy questions: First, do citizens respond to discoveries by altering their expectations about the future economic trajectory of country? If they do, this might help us understand what drives public and private responses to discoveries. For example, might governments be responding to inflated expectations of citizens, or simply taking advantage of news of the discovery to overspend in order to distribute political patronage? Second, how large and long-lasting might be the effects of discoveries on citizen expectations? A jump in expecta-

¹"There is a lot of nonsense that the oil will be a curse. No way. ...The oil is a blessing for Uganda and money from it will be used for development"-Yoweri Museveni (President of Uganda), 2006. Accessed 30th August, 2020: <https://www.idsnews.com/article/2006/10/oil-discovered-in-uganda>. The President also stated he expected oil production to begin in 2009, but as of 2020 production is still out of sight - latest estimates suggest it may not begin until 2022.

tions about the future that exceeds a realistic economic path might, in turn, drive sub-optimal decision making by both households and government. Despite the general assumption in the literature that discoveries may fuel elevated expectations, to date there is no empirical evidence on the extent to which discoveries might do this, nor causal evidence that they indeed do, by how much, or for how long.

In this paper we answer these questions. We do so by providing evidence on the impact of major oil and gas discoveries² on citizens expectations using data from Africa. Specifically, we evaluate how citizens' short-run expectations regarding changes in the economic performance of their countries, and of their own standard of living, respond to news of an oil discovery. In addition, we analyze by how much citizens adjust their expectations over time, and also provide evidence on potential mechanisms through which resource discoveries affect expectations. Finally, we examine the extent to which households incorporate these expectations into decisions with potentially long-run consequences, by estimating the short-run responses of households' fertility and migration decisions to news of oil discoveries. We demonstrate the salience of this short-lived expectations boom, shifting household behavior in consequential ways during the period of elevated expectation, but with longer-term effects.

To causally estimate the expectations response to discoveries, we match survey data on households' expectations from five rounds of the Afrobarometer surveys between 2002 and 2015 to a unique database on discovery events in Africa. Our identification strategy exploits the plausibly exogenous differences in the timing of discoveries relative to the rollout of the survey interviews. Specifically, we compare the expectations of people interviewed (shortly) before a discovery with the expectations of people from the same country but interviewed (shortly) after the discovery. Also to address concerns about plausible randomness of discoveries, we impose several restrictions: we condition on country and year fixed effects, thus exploiting within-country variations in timing of discoveries and controlling for time-invariant unobserv-

²Hereafter referred to as oil discoveries.

able factors that may correlate with exploration effort.³ We also allow for differential effects of giant discoveries from the effects of smaller (subgiant) discoveries on expectations and show that our results are robust to different sizes of discoveries.

The main finding of the paper is that oil discoveries have a non-trivial impact on citizen expectations, which in turn are shown to also be associated with changes in household decisions. Oil discoveries increase expectations of better economic conditions and living standards by 35% and 52%, respectively. Secondly, we find that households' expectations response to discoveries pertains only in the short-run, as we do not find statistically significant results beyond nine months after discovery announcements. This provides suggestive evidence that while citizens internalize news of discoveries into their expectations, over time, they re-adjust their expectations to the reality that the perceived benefits associated with discoveries may not be realized as quickly, or to the extent originally envisaged. Third, we test several potential mechanisms through which discoveries drive expectations and find institutional quality to be the key channel. Discoveries are associated with greater heightening of expectations in countries with weaker institutions while the effect is null in countries with strong institutions. This provides suggestive evidence that the quality of institutions may be important in shaping citizen expectations on the impact of oil discoveries. This finding concurs with earlier findings of [Cust and Mihalyi \(2017a\)](#) who showed that countries with weaker political institutions experience lower growth after a discovery relative to the period before a discovery and compared to contemporaneous growth forecasts by the IMF.

Building on the findings of elevated expectations associated with oil discoveries, the final part of the paper examines the potential implications of the expectations on household decisions. In other words, we address the question of whether citizens incorporate these expectations into their choices, with potentially long-run consequences. Here we examine household migration and fertility decisions. Leveraging a data set on applications to the United States (US)

³For example, exploration effort may vary across countries due to variation in country-level institutional quality ([Cust and Harding, 2019](#)), thus shaping cross-country variation in discoveries.

Diversity Visa (DV) lottery which grants successful applicants permanent residency in the US, we examine the short-run impact of oil discoveries on new applications from countries with discoveries. Our findings reveal a short-run negative effect of oil discoveries on new applications to the program. The number of principal applicants to the lottery reduces by 3.1 persons per 1,000 applicants within the first year after a discovery. The effect is even larger (3.6 persons per 1,000 applicants) for giant discoveries. These findings provide suggestive evidence that oil discoveries lower the incentives of citizens to (e)migrate at least in the short-run, with expectations of better economic and living conditions as a likely operative channel.

We also examine the fertility response to a positive shock in expectations using the timing of discoveries as an exogenous shock. Using an event study design and a fixed effect estimator, we find that giant oil discoveries increase fertility in one year subsequent to the discovery announcement by 1.6 percentage points (8 percent from the mean) thus suggesting a short term baby boom one year after giant discoveries. We however find no statistically significant effect when we account for smaller (subgiant) discoveries, suggesting this response is sensitive to the size of the discovery.

These findings underscore the salience of the expectations 'boom' - while the jump in reported expectations is large, it need not translate into significant changes in household behavior. However, we find that indeed this behavior change appears to be significant and spread across two important domains for long-run economic outcomes: fertility choices and migration choices. While citizen expectations seem to return to pre-discovery levels - perhaps as a less optimistic economic path becomes apparent - household choices have already locked in persistent consequences, such as additional children or migration decisions. This channel of household choices in response to elevated expectations may provide us with another clue regarding how suboptimal outcomes can arise from news shocks.

This paper makes two primary contributions to the literature. First, we add to the fledgling literature on the presource curse that seeks to understand why some countries appear to shift to worse growth paths subsequent to major petroleum discoveries. [Cust and Mihalyi \(2017a\)](#)

show that in countries with weaker institutions that discover oil, growth can decline in the post-discovery period prior to production. This growth disappointment may be associated with elevated and excessive expectations about the benefits that will flow from the discovery, potentially leading to sub-optimal choices by both private and public agents. Collier (2017) indeed argues that governments' economic decisions in the post-discovery period can be driven by citizen expectations, thereby resulting in unsustainable spending. However, while these studies implicitly assume that citizen expectations influence government decisions and consequently the growth disappointment, empirical evidence on the causal impact of discoveries on citizen expectations is lacking. Thus, this paper, to the best of our knowledge, provides the first empirical evidence on the impact of discoveries on citizen expectations and the plausible mechanisms underlying the relationship. The closest paper to our study is by Girard et al. (2020) who examine the effect of oil price booms (during production) on household expectations in Kazakhstan.

Second, we contribute to the literature on the impact of natural resource discoveries on the behaviors and outcomes of economic agents (Mansoorian, 1991; Arezki et al., 2017; Toews and Vézina, 2017; Bazillier and Girard, 2020). Arezki et al. (2017) for instance use the announcement of giant oil discoveries as a news shock and analyze the effects on macroeconomic outcomes.⁴ The authors find strong evidence of an anticipation effect: a decline in the current account and savings rate, with an increase in investment in the period between discovery and production. The current account and savings rate only begin to increase once production starts. This lends support to the idea that expectations play a key role in the current account dynamics in resource-rich countries. Therefore, our paper further underscores the importance of understanding the role expectations may play in determining how resource wealth impacts different sectors of the economy. Our result that discoveries shape long-run choices not only confirms the role of expectations about the future for household behavior but are also the first of their

⁴There have been a series of recent studies on the economic and political consequences of major resource discoveries including the impact on the exchange rate (Harding et al., 2016), the effects on government spending (Okada et al., 2019), arms imports (Vezina, 2020), and earlier work on the impact on political institutions (Tsui, 2010), and conflict (Lei and Michaels, 2014).

kind to be shown empirically in relation to oil discoveries.

The remainder of the paper is organized as follows: Section 2 describes the various data sets used in the analysis. The identification strategy is outlined in section 3. Results are presented and discussed in section 4. In Section 5 we examine the impact of discoveries on household decisions. Section 6 concludes with a summary of the findings.

2 Data

This paper utilizes data from household surveys, oil discoveries, and complementary data sets on quality of institutions, fertility and migration.

2.1 Afrobarometer Surveys

The individual level data on expectations are sourced from the Afrobarometer surveys. These are nationally representative surveys of individuals' attitudes on an array of issues ranging from social and economic policies to politics across several African countries. The surveys began in 1999 with 12 countries and have since expanded to 35 countries in 2016 (round 6). The sample design is a clustered, stratified, multi-stage, area probability sample.⁵ We use data from five rounds of the survey (rounds 2-6) from 35 African countries⁶ surveyed between 2002 and 2015. After data cleaning, we have over 146,000 potential observations.

The main data in the surveys relevant to this paper are questions on individuals' expectations and subjective evaluation of current and future economic and living conditions. The Afrobarometer asks respondents to rate their current living conditions and expectations of their living conditions over the next 12 months. Similarly, respondents are asked to rate the current economic conditions prevailing in the country as well as their expectations of the economic

⁵<http://afrobarometer.org/surveys-and-methods/sampling-principles>. Accessed: July 2019.

⁶Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Côte d'Ivoire, the Arab Republic of Egypt, Ethiopia, Gabon, Ghana, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, South Africa, Sudan, eSwatini, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe.

conditions over the next 12 months. Specifically, respondents were asked the following:

Current living and economic conditions:

1. *In general, how would you describe: Your own present living conditions?*
2. *In general, how would you describe: The present economic condition of this country?*

Expectations on living and economic conditions:

3. *Looking ahead, do you expect the following to be better or worse: Your living conditions in twelve months time?*
4. *Looking ahead, do you expect the following to be better or worse: Economic conditions in this country in twelve months time?*

For each question, respondents were asked to select one of five responses:

1=Much worse, 2=Worse, 3=Same, 4=Better, 5=Much better

that truly reflect their views on the question. Based on these responses, we generate dummy variables equal to 1 if a respondent answers "Better" or *Much Better* to the respective questions and 0 if otherwise. Thus our variables on expectations, for instance, are indicator variables equal to 1 if a respondent expects at least better economic/living conditions, and 0 if otherwise. It is noteworthy to emphasize that questions on expectations on living conditions are available in four out of the five rounds of the survey.

In Figure 1, we plot the share of respondents that reported experiencing (at least) better economic and living conditions, as well as the share with expectations of better economic and living conditions. As shown in the plot, we observe considerable cross-country variations in subjective ratings of current and expected economic and living conditions. An interesting observation is the gap between expected and current economic (living) conditions: there is a positive gap between expected and current economic (living) conditions in all the countries except

Mauritius where the gap is negative. In other words, citizens in the respective African countries have expectations of positive changes in their living standards as well as the general economic conditions in their countries. A notable example in this regard is given by Cabo Verde, where more than 50 percent (70 percent) of respondents in the country have high expectations of better economic (living) conditions.

Our final data set also includes information about socioeconomic attributes of respondents (age, education, employment, and gender), access to electricity in the community, rural-urban status, individuals' sense of national vs ethnic identity, and perceptions of ethnic marginalization.

2.2 Oil Discoveries Data Set

We rely on an extensive data set on oil discoveries around the world compiled by [Cust et al. \(2020\)](#). The data set contains the universe of all major oil and gas discoveries across the globe between 1970 and 2018.

For the purpose of this study, we focus on discoveries in Africa between 2001 and 2016 to align with the available Afrobarometer data. Within this period, a total of 90 discoveries were made: 44 percent giant, and 56 percent subgiant in 14 countries. [Figure 2](#) shows the distribution of discoveries across countries. Tanzania, the Arab Republic of Egypt and Mozambique recorded the highest number of discoveries with 15, 14, and 13 discoveries respectively. However, in terms of size, Mozambique recorded the highest number of giant (11) discoveries during the period.

2.3 Complimentary Data Sets

We complement the analysis with data on Polity scores from Polity IV database.⁷ The Polity scores ranges from -10 to 10 with -10 for highly autocratic states and 10 for highly democratic

⁷<http://www.systemicpeace.org/polityproject.html> Accessed: July 2019.

states.⁸ We also include two binary indicators of whether a country is democratic or not based on data from [Acemoglu et al. \(2019\)](#) henceforth referred to as ANRR, and [Boix et al. \(2013\)](#) henceforth referred to as BMR. Thus the two democracy dummies, *Democracy(ANRR)* and *Democracy(BMR)*, take the value of 1 if the country is democratic in a given time period, and 0 if otherwise. Further we use data on fertility from the Demographic and Health Surveys (DHS) and data on number of applicants to the United States Diversity⁹ (DV) Lottery Program provided by the US Department of State.

⁸Following conventions in the literature, we treat 'interregnums' as missing ([Acemoglu and Johnson, 2005](#)).

⁹<https://travel.state.gov/content/travel/en/us-visas/immigrate/diversity-visa-program-entry/diversity-visa-program-statistics.html>.

3 Empirical Strategy

To causally identify the effect of oil discoveries on citizen expectations, we use an identification strategy that exploits plausibly exogenous variations in the timing of discoveries and survey roll-out by comparing the expectations of people exposed to discoveries (i.e. interviewed "shortly" after a discovery) to the expectations of people in the same country but were not yet exposed to a discovery (i.e., interviewed "shortly" before a discovery) at the time of the survey.

Conventional economic theories suggest that individuals form expectations based on the set of information available (Coibion and Gorodnichenko, 2015). Thus a positive information shock such as news of an oil discovery in a country is likely to trigger a change in citizen expectations about the economic outlook of the country as well as their living conditions in the future. This suggest that conditional on observable and unobservable differences, a change in expectations between individuals interviewed after a discovery relative to those interviewed prior to a discovery can be attributable to the effect of the discovery.

To isolate the effect of discoveries from other macroeconomic shocks, we focus on the changes in expectations of individuals interviewed within six months before and after a discovery. Thus we classify an individual as exposed to a discovery if the individual was interviewed within six months after the announcement of an oil discovery, and individuals yet to be exposed as those interviewed within 6 months prior to a discovery in their country.

Assuming that our chosen time period is ideal to identify the effect of discoveries on expectations, our main identification strategy includes three groups of people : (i) those interviewed within six months after a discovery (*Postdiscovery*); (ii) those interviewed within six months before a discovery (*Prediscovery*); and (iii) those surveyed more than six months prior to any discovery (the omitted category in the regressions)¹⁰(see: Kotsadam and Tolonen, 2016; Knut-

¹⁰Note that here we exclude individuals interviewed more than six months after a discovery. In the same way in Section 4.1 where we extend the time period for exposure to, for example, 18 months before/after a discovery, we exclude individuals interviewed more than 18 months after a discovery. The exclusion of this subgroup is preferred to their inclusion in reference category (iii) as the possibility of elevated expectations persisting over a longer period after discoveries cannot be ignored. Hence including them in the reference group could result in an underestimation of the impact. Nonetheless, our results (available upon request) are robust to their inclusion.

sen et al., 2017; Isaksson and Kotsadam, 2018).

To formally express our baseline equation, let *Discovery* be an indicator variable equal to 1 for persons interviewed within the 12 months around a discovery¹¹ and zero if otherwise, while *Postdiscovery* remain as previously defined. Following Sangnier and Zylberberg (2017), Brodeur (2018), Mensah and Opoku-Agyemang (2018) and Currie et al. (2018)¹² we specify our estimation equation as follows:¹³

$$Y_{ict} = \phi \times Postdiscovery_{ict} + \gamma \times Discovery_{ict} + \theta \times X_{ict} + \gamma_c + \psi_t + \epsilon_{ict} \quad (1)$$

where Y_{ict} is a placeholder for the expectations of individual i living in country c and surveyed in year t . Here, we focus on two measures: expectations of general economic outlook in the country, and respondents' living standards in the 12 months following the interview date. X_{ict} is a vector of controls including individual (age, employment status, education, and gender) and community (rural-urban status, and access to electricity) characteristics. Further, our regression includes country (η_c) and year (ψ_t) fixed effects. Country fixed effects ensure that we compare individuals in the same country interviewed before and after a discovery, while year fixed effects control for contemporaneous shocks that may confound the relationship. Country fixed effects also absorb and control for time-invariant differences across countries. Our coefficient of interest is ϕ , which is a difference-in-difference type estimate of the effect of discoveries on expectations (Isaksson and Kotsadam, 2018). ϕ is obtained by comparing the difference in expectations between post-treatment individuals (interviewed within six months after a discovery, i.e., $Postdiscovery_{ict}$) and the control group (individuals interviewed more than

¹¹That is either within six months before (*Prediscovery*) or after (*Postdiscovery*) a discovery.

¹²These papers use a similar research design albeit in varying context and setup.

¹³Alternatively, equation (1) can be specified as:

$$Y_{ict} = \alpha \times Postdiscovery_{ict} + \beta \times Prediscovery_{ict} + \theta \times X_{ict} + \gamma_c + \psi_t + \epsilon_{ict}$$

where $Prediscovery_{ict}$ is a dummy equal to 1 if the individual was interviewed within six months before a discovery and 0 if otherwise; $Postdiscovery_{ict}$ is a dummy equal to 1 if the individual was interviewed within six months after a discovery and 0 if otherwise; $\alpha - \beta$ is equivalent to ϕ in equation (1) (see: Kotsadam and Tolonen, 2016; Knutsen et al., 2017; Isaksson and Kotsadam, 2018)

six months prior to any discovery) relative to the difference between pre-treatment individuals (interviewed within six months prior to a discovery, i.e., *Prediscovery_{ict}*) and the control group in the same country and year. All estimations are done using OLS and standard errors are clustered at the country level.

The main identifying assumption is that the roll out of the surveys and timing of the discoveries are uncorrelated. Several studies have documented that oil discoveries are plausibly exogenous due to uncertainties associated with exploration activities and also the fact that fossil fuel deposits are geologically distributed (Cavalcanti et al., 2019; Toews and Vézina, 2017; Arezki et al., 2017; Cotet and Tsui, 2013). Thus discoveries, particularly giant discoveries,¹⁴ can be considered as unanticipated events whose timing is unknown ex ante (Arezki et al., 2017) once we account for country and year fixed effects.

However, our identifying assumption breaks down if the survey implementation across countries responds directly to news of discoveries, as it may induce selection bias. For instance, our assumption is likely to be violated if countries were targeted by the survey after the announcement of oil discoveries or surveys were rolled-out immediately after discoveries were announced. Fortunately, the structure and implementation plan of the Afrobarometer survey alleviates this concern (Depetris-Chauvin et al., 2018; Eifert et al., 2010). The Afrobarometer surveys have been running consistently across several African countries since 1999, expanding from 12 in round one to 35 in round six. Additionally, like most cross-country surveys, the preparation and logistics for the survey such as hiring and training of field enumerators, selection of enumeration areas, etc., takes several months and sometimes years (Depetris-Chauvin et al., 2018; Eifert et al., 2010). Therefore, it is unlikely that the rollout will necessarily be done in response to news of a discovery. More so, since it is cross-country and each round is implemented at most over a period of one year across all participating countries, it is unlikely that an entire round of the survey would be undertaken merely in response to a one-off event in a particular country. In spite of these one cannot completely rule out the possibility of adjustment

¹⁴Defined as oil fields containing at least 500 million barrels of recoverable oil.

of the survey or questionnaire design in response to discoveries in the medium to long-run. To this end, our baseline analysis uses a 12 month window¹⁵ around the time of a discovery in identifying the treatment (pre and post) and comparison groups. Alternative estimations are done using different time bandwidths as robustness checks.

In addition to the reasons outlined above, we provide support to our identifying assumption(s) by showing that people interviewed within six months before a discovery are fairly identical in covariates with those interviewed within the same time period after a discovery as shown in Table 1. Specifically, we perform two balance tests where: first, we compare individuals interviewed within six months after a discovery (i.e. post-treatment) with all other individuals interviewed before a discovery (i.e. pre-treatment and reference group). Second, by comparing individuals interviewed within six months after a discovery (post-treatment) with individuals interviewed within six months before a discovery (pre-treatment). Given that our data set is a cross-country panel, to ensure that we compare individuals in the same country interviewed before and after a discovery, we regress each variable on the post-treatment variable while controlling for country fixed effects (Depetris-Chauvin et al., 2018). The main variables considered in the covariate balance test include age, education, gender, employment, whether an individual lives in a rural or urban area, access to electricity in the community, and ownership of radio and TV sets.

The results suggest that the covariates are largely balanced between respondents interviewed before a discovery and those interviewed after a discovery. Attributes such as educational level, employment status, and ownership of a radio set are the only exceptions where we observe marginal differences between the two groups of respondents. A priori, we expect that these imbalances, if anything, should operate to underestimate the impact of discoveries on expectations rather than overestimate it. For instance, an educated and/or employed person may not overly increase her expectations on living and economic conditions upon the announcement of a discovery relative to a less educated and/or unemployed person. Nonetheless, since

¹⁵Six months before and after a discovery.

we control for these characteristics, their inclusion should absorb their effect on the outcome variables, even though our results remain robust to their exclusion.

Conditional on the plausibly exogenous variations in the timing of the survey interviews and announcement of discoveries in a given country and year, ϕ , measures the causal impact of discoveries on citizen expectations.

4 Results

In this section we present results on the effects of discoveries on citizen expectations using two main outcome variables: (i) *Economic expectations*: a dummy variable equal to 1 if the individual expects at a better or much better economic conditions in the country in the 12 months following the survey, and 0 if otherwise; and (ii) *Expectations on living standards*: a dummy variable equal to 1 if the individual expects a better or much better living conditions in the 12 months following the survey, and 0 if otherwise. It is noteworthy to emphasize that there is limited data on expectations on living standards, as it is not available in all rounds of the survey used in the analysis. As a result, in some cases we do not find enough observations in the pre and post treatment groups, hence limiting our ability to estimate the response of expectations on living standards to news of discoveries across all our regression specifications.

4.1 Main Results

Table 2 presents our baseline results. Panel A of Table 2 shows the results on the effect of (giant/subgiant) discoveries on expectations while Panel B focuses exclusively on the effects of giant discoveries on citizen expectations. Columns 1-3 show the results of the effect of discoveries on expectations on general economic conditions while columns 4-6 show the results on expectations on living standards. For each outcome variable, we estimate three specifications by successively adding controls to check the robustness of the estimates. Our preferred specifications however, are columns 3 and 6 where we control for not only individual and commu-

nity attributes, but also respondents' subjective valuation of current economic conditions and living standards respectively. Expectations are often path dependent. For instance, the socioeconomic well-being of person can influence their level of future expectations. Therefore controlling for individuals' subjective ratings of the general economic conditions and their living standards at the time of the survey, allow us to disentangle the effects of these factors from the effect of discoveries on expectations. Our results show a positive association between current ratings of economic and living conditions and expectations of economic and living conditions.

Starting with Panel A, our coefficient of interest is *Postdiscovery* which measures the difference in expectations between post-treatment individuals and the control group relative to the difference between pre-treatment individuals and the control group in the same country and year. It is positive and statistically significant, and relatively stable across the various specifications. The results suggest that news of an oil discovery increases citizen expectations about the general economic outlook of the country and their own living standards by 21 and 33 percentage points (pp) respectively (columns 1 & 3). How large are these effects? Relative to the sample mean, our estimates suggest that discoveries increase expectations about a country's economic performance and individuals' living standards by 35 and 52 percent (%) respectively.

We might worry that while giant discoveries are plausibly exogenous in terms of timing, smaller discoveries (i.e. subgiant) may not be since discoveries of smaller fields are more within predicted set of outcomes; in other words, giant discoveries might be thought of as being in the upper tail of the distribution for a given exploration well being drilled. Also discoveries of small oil deposits may not necessarily translate into exploitation, as the project economics of extracting small quantities of the resource may not be sound. For both these reasons we might prefer to restrict our sample only to the largest 'giant' discoveries.

In Panel B (Table 2), we examine the robustness of our results to the size of the discovery by estimating the results while focusing exclusively on giant discoveries. Reassuringly, the estimated effects remain positive and statistically significant. In terms of the magnitude, we find that the effects with respect to expectations on general economic conditions are slightly higher

for giant discoveries relative to general discoveries. The effects with respect to expectations on living standards are similar in both panels. Specifically, we find that giant discoveries are associated with a 26 pp increase in expectations on general economic conditions compared with 21 pp increase associated with (giant/subgiant) discoveries (in Column 3). The effect on expectations of living standards are however quantitatively and qualitatively similar in both panels. This provides evidence that our baseline results are not solely driven by subgiant discoveries.

Overall, our results show that oil discoveries have a non-trivial impact in heightening expectations. An interesting observation from the results is that the effect of discoveries on expectations of living conditions is consistently larger than the effect on expectations of general economic conditions. This provides suggestive evidence that individuals have higher expectations of the impact of discoveries on their own lives than their expectations on the overall economy.

Evolution of impact over time: Next, we examine the extent to which these effects persist over time. Recall that in our baseline (Table 2), we define our pre-and post-treatment groups using the six months period before and after a discovery respectively. In this section, we explore alternative time periods in defining our pre-and post-treatment periods and examine how the effect of discoveries on expectations changes over time. Specifically, we explore 9, 12, 18, 24, and 36 months before and after a discovery, and estimate separate regressions for in each case.

Results are summarized in Figure 3, while detailed regression results are shown in Table 13 in the Appendix. The results are consistent with the baseline results as the effect on expectations of living standards are consistently larger than the effect on expectations on general economic outlook. However, the effect is only statistically significant when comparing the differences in expectations of people interviewed within nine months before and after a discovery. This provides suggestive evidence that news of discoveries induce elevated expectations in the short-run. However, over time people adjust their expectations to the reality that the benefits from discoveries, if any, will take time to materialize.

This result may also be consistent with the presource curse hypothesis; if citizens quickly

realize that the anticipated benefits may never materialize, they may modify their expectations back down once this begins to become evident.

4.2 Mechanisms

In this section we explore potential channels through which natural resource discoveries influence expectations. We evaluate three potential channels: access to information, social and political economy, and role of institutions.

4.2.1 Access to Media

In an information constrained economy, only agents with access to some kind news media - directly or indirectly - will be able to internalize the news shock associated with discoveries in their expectation formation. Thus discoveries might not affect the expectations of people without access to the media, unless they can acquire this information indirectly. However, this assumption is unlikely to hold in societies where informal channels such as social networks play a key role in information sharing. In Tables 3, we assess the effect of access to mainstream media (radio & television) on the relationship between discoveries and expectations on general economic outlook and living standards respectively. For each media type, we group our sample based on ownership of TV/radio as well as the frequency of listening to TV/radio news. We do not find differences in the effect of discoveries on expectations of people who own TV/radio sets versus those who do not own TV/radio sets. Similarly, we find no evidence of differences between frequent listeners of TV/radio news and non-frequent listeners to TV/radio news. Our results suggest that discoveries raise expectations of people irrespective of whether they own(listen) to TV/radio sets(news) or otherwise. However, this does not necessarily imply that access to mainstream media is not important. Instead, we might see such results if informal channels of information flow are effective in delivering news on discoveries and fueling citizen expectations, or indeed if another untested channel is more important, beyond media

access.

4.2.2 Socioeconomic Factors and Political Economy

Education, employment, and urbanization: Our baseline results suggest that discoveries have a substantial impact in raising expectations. Evidence on how the effects are distributed across socioeconomic groups such as education and employment status of people prior to the discovery is helpful in understanding how discoveries fuel expectations. In Tables 4 (columns 1-6) we examine the differences in the effect discoveries on expectations across heterogeneous groups based on educational level and employment status. Interestingly, we find evidence of elevated expectations associated with discoveries for all people whether educated or uneducated, employed or unemployed. In other words, the news shock associated discoveries raises hopes of both skilled and unskilled labor force for a better economic progress in the country and living standards as well. Further, we evaluate the expectations response of rural and urban dwellers (Tables 4, columns 7-8), and again find no significant differences. Discoveries raises the expectations of rural households nearly as much as for urban households.

Demographic factors: We also examine the effects by demographic groups by splitting the sample into two groups: Millennials (1981-96 age cohorts) and Generation X (1960-80 age cohorts). Our results in Table 5 show that discoveries raises the expectations of Millennials as well as Generation X.

National identity vs ethnicity: Several studies have documented the role of natural resources in fueling internal conflicts (Janus, 2012; Couttenier et al., 2017; Berman et al., 2017; Wegenast and Schneider, 2017). Therefore in fragile states with inter-ethnic tensions, news of a major discovery may influence the level of expectations about the impact of the resources on both general macroeconomic stability and living standards. We test this mechanism by looking at national vs ethnic identity, and individuals with who report of marginalization of their ethnic

group.

The results in Table 6 reveal that discoveries have a positive effect on expectations irrespective of their sense of national identity, as well as for people who perceive their ethnic groups as marginalized or not. This provides suggestive evidence that political economy plays little or no role in heightening expectations following the announcement of an oil discovery in a country.

4.2.3 Institutions

Theoretically, the role of institutions in managing expectations is ambiguous. On the one hand, countries with strong institutions may ensure equitable distribution of rents from the resource extraction. As a result, citizens in such countries may raise their expectations about the benefits of natural resources discovered relative to citizens of countries with low quality institutions where elite capture and rent-seeking may limit the distribution of the gains from the resource. On the other hand, countries with strong institutions may have the potential to manage citizen expectations, through public education by leveraging the citizens' trust in institutions. Likewise discoveries can elevate expectations in countries with weak institutions. Autocracies may use discoveries as tools to garner political and social support via the promise of better economic conditions using rents from the resource. Also, weak regulatory governance in the resource sector creates opportunity for commercial exploration companies that depend on financing from speculative investors to exaggerate the economic potentials of discoveries, which in turn have plausible implications in elevating citizen expectations (Collier, 2017).

In this section, we examine the role of institutions in mediating or amplifying the effect of discoveries on expectations. Prior evidence suggest a symbiotic relationship between institutional quality and the development of the resource sector (Cust and Harding, 2019). This limits the effectiveness of using contemporaneous institutional quality to identify the role of institutions in managing expectations. Following Cust and Harding (2019) we use the predetermined institutional quality measured by the level of institutional quality in the pre-sample period, i.e. before the discoveries in our data were made. Two indicators of institutional quality are used:

Polity IV, and democracy (ANRR and BMR) measured in 2001.

Using the Polity IV index, we split our sample into two groups: a strong institutions category for countries whose index is above the median value for African countries, and a weak institutions category for countries whose index is below the median. For robustness checks, we compute an additional measure using the 75th percentile as threshold for splitting the countries into high and weak institutions countries. Our democracy measures (ANRR and BMR) are dummy variables equal to 1 if the country is democratic and 0 if otherwise.

It is worthwhile to emphasize that we are unable to analyze the role of institutions in managing expectations on living standards following an oil discovery due to data constraints. As noted earlier, data on expectations on living standards are not available in all the survey rounds compared to data on expectations of economic conditions. Thus by splitting the countries in our data set into the strong and weak institutions categories, we do not have adequate observations in interviewed in the pre and post treatment periods as defined in this paper. For instance, using our Polity IV measure of institutions and conditional on having a non-missing response on expectations of their living standards, we have 4,109 individuals interviewed within six months after a discovery, and none interviewed within six months prior to a discovery in countries with for Polity IV above the median. On the other hand in countries with Polity IV score below the median and conditional on having a non-missing response on expectations of their living standards, we have no individual interviewed within six months after a discovery, and 2935 interviewed within six months prior to a discovery in countries with for Polity IV below the median. A similar outcome is realized for using the other measures of institutional quality. This data limitation constrains our ability to examine the role of institutions in explaining the effect of discoveries on citizen expectations of living standards. Hence our assessment of the role of institutions in the discoveries-expectations nexus focuses exclusively on expectations of general economic conditions where we have enough observations in strong and weak institutions sub-samples.

In Table 7, we estimate separate regressions for strong and weak institutions categories. The

results are striking. We find no effect of discoveries on expectations in countries with strong institutions but a positive and statistically significant impact in weak institutions countries. Discoveries in countries with low Polity II index countries increases economic expectations by 31 percentage points (column 2). The result is similar (quantitatively and qualitatively) for less democratic countries (column 6). As a robustness check, in columns 3-4, we redefine the high and low Polity countries using the 75th percentile Polity II index among the distribution of African countries as the threshold.¹⁶ Also in columns 7-8, we complement our analysis with an alternate measure of democracy (Democracy BMR) from [Boix et al. \(2013\)](#). Overall the results suggest that our findings on the role of institutions are robust to the measures of institutional quality. These findings provide suggestive evidence that the quality of institutions in a country may be important in shaping expectations associated with oil discoveries.

4.3 Robustness Checks

Election Years: Electoral promises have the potential to heighten expectations about economic performance and welfare of citizens. This has the possibility to conflate the effect of discoveries on expectations.

To isolate the effect of election cycles from our estimated effect of discoveries on expectations, we re-estimate our baseline model while excluding election years, and one year before and after elections (Table 8). In many African democracies, election season starts at least one year prior to elections when official campaigning start. The euphoria around election, particularly after change in governments, stays on for some months after the elections. These motivate the exclusion of the one year window around election years from our analysis. Our results in Table 8, show that the effect of discoveries on expectations remains stable and qualitatively similar to our baseline results, albeit quantitatively lower than the baseline. Nonetheless, our findings suggest that discoveries have a positive impact on expectations irrespective of the period (i.e.

¹⁶Thus a country is classified as having weak institutions if its Polity score during the pre-sample period is lower than the threshold and strong if otherwise.

election or non-election period).

Alternate Sample: So far, our data include respondents from countries without discoveries, at least during the study period, serving as control. Our estimates are likely to be biased if respondents from resource-rich countries are inherently different from respondents in non-resource rich countries. We test the validity of our results to the exclusion of non-resource rich countries from our control group. In this case, our control group solely consist of respondents surveyed before a discovery in their respective countries. In other words, here we impose a much stricter identification assumption in estimating the effect of discoveries on expectations.

We find that the effect of discoveries on expectations remains positive (Table 9). In column 3, the results indicate that discoveries increase economic expectations by 15.6 percentage points compared to 21.4 percentage points in the baseline. Meanwhile the effect on expectations on living standards (column 6) is 31.5 percentage points compared to 33 percentage points in the baseline. The conclusion is that our results is robust to the composition of the control group.

Measuring expectations: Furthermore, we estimate our model while replacing our dummy variable measure of expectations with a five-point scale ranking of respondent's expectations, ranging from 1, meaning "much worse" to 5 meaning "much better". The results in Table 10 again confirms our main results: oil discoveries have a positive and statistically significant effect on expectations. In columns 3 and 6, we find that discoveries increase expectations on economic conditions and living standards by 0.7 and 1 point respectively. This provide suggestive evidence that our results are robust to the measure of expectations.

5 Effects of Discoveries on Household Decisions

In this section, we examine the potential implications of elevated expectations induced by oil discoveries on household decisions in the short-run. We focus primarily on migration and fertility decisions.

5.1 Migration

Local economic conditions and conflicts are major drivers of migration flows. Expectations about the economic prospects in home countries relative to alternative destinations play a key role in migration decisions of households particularly in developing countries (Sjaastad, 1962; De Jong, 2000). Following up on the results shown in Section 4.1, we examine how expectations of economic conditions induced by oil discoveries influence the households desire to emigrate. Measuring (international) migration decisions is empirically challenging primarily due to the paucity of data on migration intents of households or individuals. Existing studies on migration have largely focused on internal migration and more so measured realized outcomes (i.e. whether individual migrated or not) rather than intentions (Cai, 2020).

To identify the effects of discoveries on migration intentions of citizens, we focus on applications to the Diversity Visa (DV) lottery program of the United States (US).¹⁷ The DV lottery program was implemented in 1994 by the US government with the goal of offering formal access to foreign citizens an opportunity to obtain a residence (working) permit to the US so as to promote diverse population in the country. Each year millions of people across to globe apply to the DV program hoping to be selected as part of the nearly 50,000 DVs issued by the US State Department. Applicants are selected through a lottery. Thus whereas winning the DV lottery is plausibly random, applications to the program are not. Factors such as social, economic, and political conditions influence households' (individuals') decision to apply to the program. We therefore use applications to the program as a measure of households' desire to migrate.

¹⁷<https://www.uscis.gov/greencard/diversity-visa>.

We compile panel data on the number of DV applications¹⁸ by applicant's country of origin between 2007 and 2018 matched with event data on discoveries to estimate the reduced-form model:

$$Y_{ct} = \beta \times Postdiscovery_{ct} + \eta_c + \lambda_t + \mu_{ct} \quad (2)$$

where Y_{ct} is a placeholder for the number of applicants per 1,000 people from country c in year t ; η_c and λ_t measure respectively country and year fixed effects. Country fixed effects absorbs time invariant correlates of migration decisions. These factors include among other things, bilateral relations between home country and the US, historical flows of migrants between the two countries, and socio-cultural factors. Year fixed effects on the other hand absorb time varying factors (economic shocks, or seasonal changes in migration) that could influence migration decisions. $Postdiscovery_{ct}$ is an indicator variable which takes the value of 1 if there was a discovery in year t or $t - 1$. Since applications to the program are opened at a particular time in the year— typically during the fall— the short-run effects of resource discoveries on households decisions to emigrate may not be restricted to contemporaneous discoveries, but also discoveries in the preceding (calendar) year.¹⁹ Further, we estimate variant models using giant discoveries and the combination of both giant and subgiant discoveries, and find similar results. Our parameter of interest is β which measures the causal effect of discoveries on the number of applications to the DV lottery program. Causal identification of this effect relies on within-country variations in the timing of discoveries which is arguably as good as random. To account for cross-sectional and temporal correlation in the residuals, we use the [Driscoll and Kraay \(1998\)](#) standard errors.

¹⁸<https://travel.state.gov/content/travel/en/us-visas/immigrate/diversity-visa-program-entry/diversity-visa-program-statistics.html>.

¹⁹A (giant) discovery in December can influence households' decision in terms of applying to the DV lottery program which opens in September of the following year.

5.1.1 *Results*

In Table 11 we present our results on the effects of discoveries on applications to the US DV lottery program. To isolate scale effects associated with differences in population size across countries, we normalize the number of applicants by population of the respective countries. Also, we focus on two types of applications: the number of principal applicants ("entrants") and the total number applicants which consist of the sum of principal applicants and their dependents/family ("derivatives").

In columns 1 and 2, we examine the effects of discoveries on the number of entrants per 1,000 people, while columns 3 and 4 examines the effects on total applicants per 1,000 people. Overall, we find giant discoveries induce slightly higher effect (in magnitude) than general discoveries, thus suggesting giant discoveries have plausibly higher effect in elevating expectations among households and hence migration decisions. Specifically, the results indicate that giant oil discoveries reduce the number of entrants (principal applicants) by 3.6 persons per 1,000 people. General discoveries (i.e., giants and subgiants) one the other hand, is associated with a reduction in the number of entrants by 3.1 persons per 1,000 people. Relative to the sample mean, the effect size is substantial: giant discoveries induce a 78 percent ($3.6/4.6$) reduction in the number of entrants to the program. Turning to the total number of applicants, our results shows that giant discoveries reduces the total number of applicants by 4.1 persons per 1,000 people corresponding to a 66 percent reduction relative to the sample mean.

These findings provide suggestive evidence of a significant short-run negative effect of oil discoveries on households' incentive to migrate, with expectations of the potential windfalls from the resource extraction on local economies and their own welfare as likely operative channels.

5.2 Fertility

Aside socio-cultural norms and preferences, households permanent (expected) income affect fertility behavior (Turchi, 1975; Ewer and Crimmins-Gardner, 1978). Traditional economic models suggest a positive correlation between permanent or potential income and fertility conditional on social norms and preferences (Turchi, 1975; Ewer and Crimmins-Gardner, 1978). In other words, given the economic cost associated with having children, couples' fertility decisions are influenced by the permanent (expected) income rather than transitory (current) income. Therefore, elevated expectations about the effects of windfalls from natural resource booms may have implications on fertility decisions of couples.

To identify the effect of changes in expectations on fertility, we analyze the short-run change in fertility rates following the announcement of (giant) oil discoveries. Using data on fertility from the DHS across 25 countries,²⁰ we construct a retrospective panel of females of childbearing age (15-49) and match this data with our data set on discoveries. The retrospective panel allows us to observe the changes in fertility rates for a representative female over time (Godefroy, 2018; Fujii and Shonchoy, 2019). Using this data set, we estimate the reduced form model:

$$B_{ict} = \alpha \times Postdiscover y_{ct-1} + \gamma_i + \lambda_t + \phi_{YOB \times c} + \mu_{ict} \quad (3)$$

where B_{ict} is the outcome variable measuring the fertility of woman i from country c in year t . Specifically, the outcome variable is an indicator variable equal to 1 if the woman gave birth in year t and 0 if otherwise; $Postdiscover y_{ct-1}$ is an indicator variable which takes the value of 1 if there was a (giant) discovery in the previous year. We include mother fixed effects (γ_i) to absorb time invariant attributes of the mother such as fertility preferences, family background, socio-cultural attributes, among others. In addition we include mother birth year fixed effects to absorb life-cycle trends in fertility. In other specifications, we include the interaction be-

²⁰Angola, Benin, Burkina Faso, Burundi, Cameroon, the Democratic Republic of the Congo, Côte d'Ivoire, the Arab Republic of Egypt, Ghana, Guinea, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

tween country and mother birth year fixed effects. Year fixed effects (λ_t) are also included to absorb time varying correlates of fertility. We cluster our standard errors at the country level. The coefficient of interest is α which measures the probability of a woman giving birth in the subsequent year after an (giant) oil discovery.

5.2.1 Results

Table 12 shows the results on the effects of discoveries on fertility using the specification in equation 3. In columns 1-3 we focus solely on the effects of giant discoveries on fertility while columns 4-6 focuses on general (giant and subgiant) discoveries. Across these subgroups, we estimate variant specifications to check the robustness of our estimates. Our preferred specifications are columns 3 and 6.

The main conclusion from the results is that giant discoveries have a positive impact on fertility decisions while subgiant discoveries do not affect fertility decisions. Having a giant discovery in a country is associated with an increase in the probability of a woman giving birth within 1 year after the discovery by 1.6 percentage points. The effect is statistically and economically significant. Relative to the sample mean, the effects corresponds to about 8 percent ($0.0158/0.1986$) increase in childbirth. This provides suggestive evidence of a short-run baby boom after giant discoveries possibly induced by citizen expectations of better economic and welfare conditions from the resource extraction.

One of the main identifying assumptions in equation 3 is the absence of pre-trends. In other words, our research design assumes implicitly that the timing of (giant) discoveries are as good as random. Therefore trends in fertility prior to the discovery should not correlate with the timing of discoveries. In figure 4, we present results from an event study analysis tracing the trends in fertility rates before and after a giant discovery.²¹ The event study plot confirms the absence of pre discovery trends in fertility rates and a positive and statistically significant increase in

²¹We focus primarily on giant discoveries in the event study since the results in Table 12 suggest that subgiant discoveries have no effect on fertility. Nonetheless, a similar event study analysis (available upon request) for general discoveries confirms the findings in Table 12.

fertility one year after a giant discovery. This provides further evidence suggesting a short-run increase in fertility after giant discoveries.

6 Conclusion

In this paper we examined the extent to which news about oil discoveries fuels citizen expectations on general economic conditions and living standards. We leverage a unique data set on citizen expectations matched with a data set on oil discoveries in Africa in conducting the analysis. Our identification strategy relies on plausibly random within-country variation in the timing of discoveries with survey rollout, and compare the expectations of people surveyed (immediately) after a discovery with their counterparts surveyed (just) before a discovery. We focus on giant and subgiant discoveries and show that our results are robust to the types of discoveries.

Findings from the paper suggest that oil discoveries have an economically and statistically large effect in elevating expectations among citizens when a country discovers oil. Moreover, we find evidence of impatience among citizens whose expectations return to pre-discovery levels again within just two to three years following discoveries. This means expectations return to pre-discovery levels before oil and gas production begins. Interestingly, we find that institutional quality plays an important role in shaping expectations. Finally, we provide evidence that the elevated expectations associated with discoveries have a non-trivial impact on household decisions. They raise in the short-run the number of applicants to the U.S. green card visa lottery, and childbirth increases following discovery announcements. Both these effects, like our estimated impact on citizen expectations, are however short-lived.

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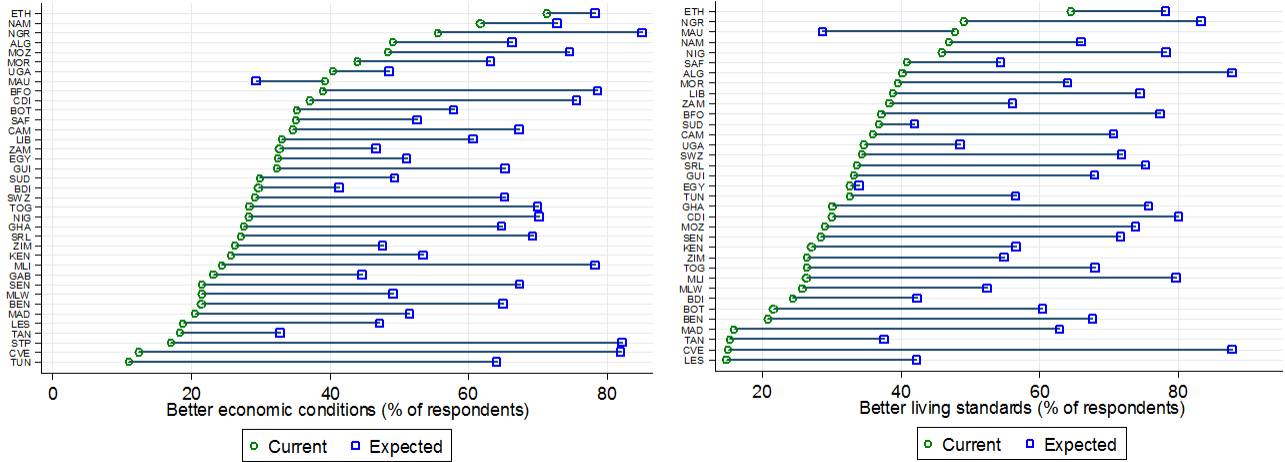
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Figures

Figure 1: Subjective ratings of current vs expected economic and living conditions



Note: This figure shows trends in the subjective ratings of current and expected economic and living conditions.

Figure 2: Oil discoveries in Africa (2001-2016)

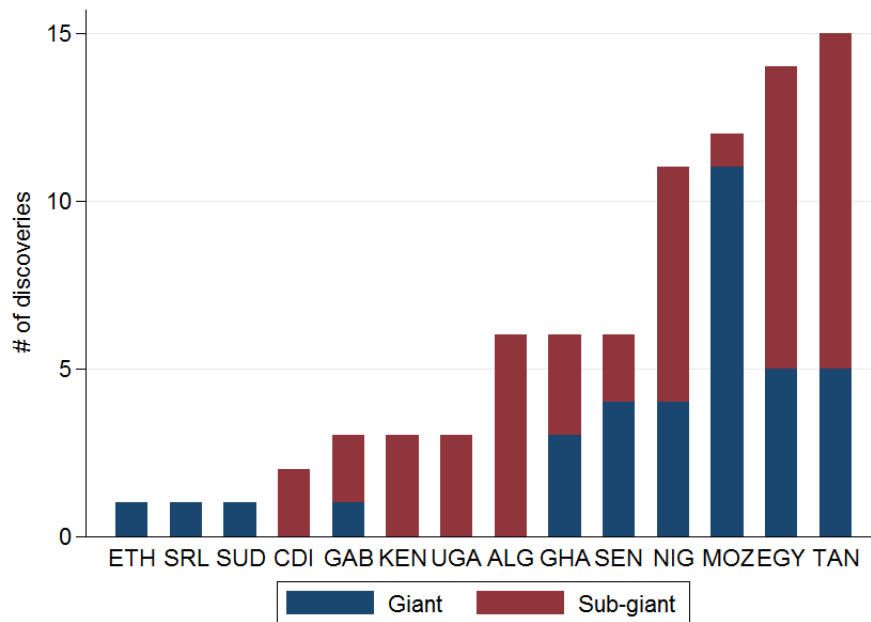
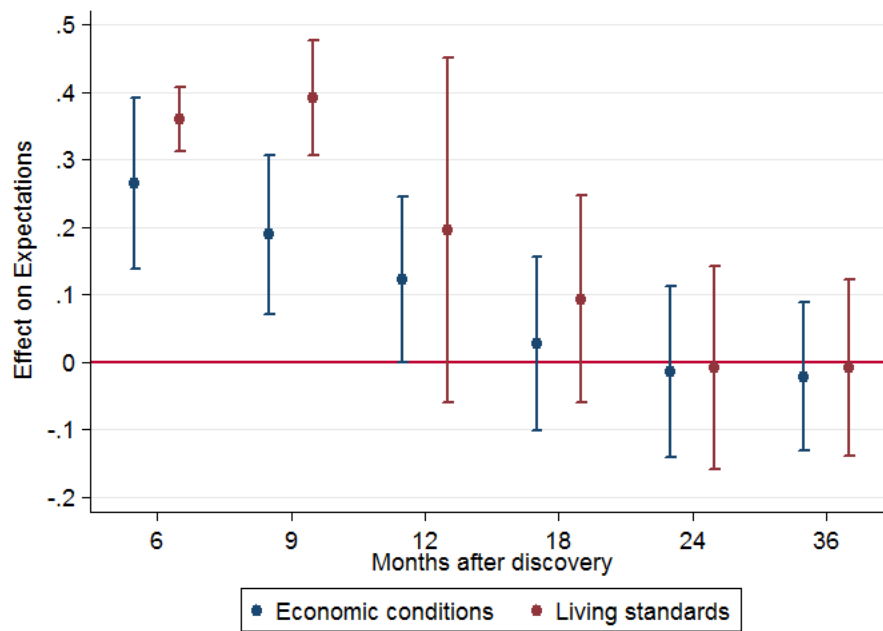
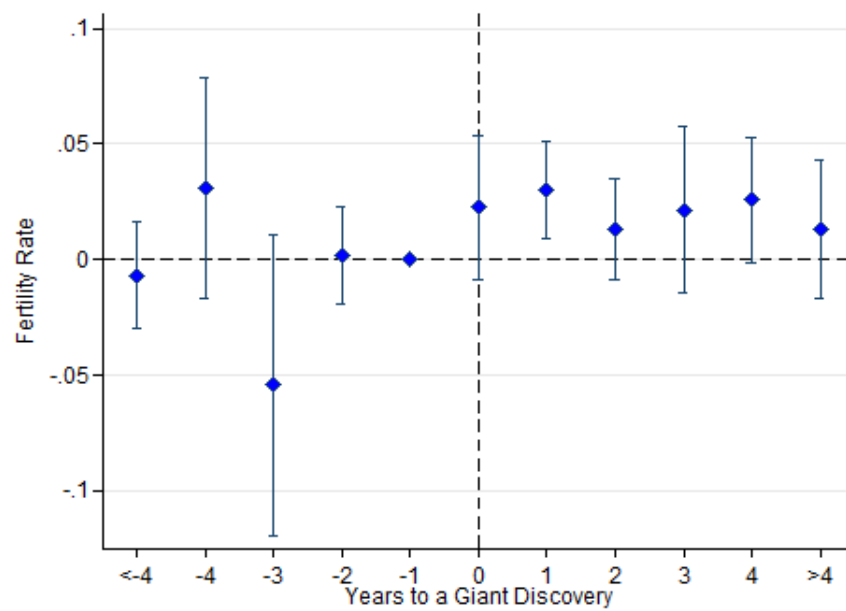


Figure 3: Oil Discoveries and Expectations



Note: This figure plots estimates and their 95% confidence interval obtained from a regression of equation 1 estimated separately for the respective time window on the horizontal axis. Each point estimates shows the effect of discoveries on expectations estimated separately for the respectively time window on the horizontal axis.

Figure 4: Event study analysis: Oil discoveries and fertility



Note: This figure plots coefficients and their 95% confidence interval from an event study regression of a dummy variable equal 1 if the woman gave birth in year t on event dummies while controlling for mother fixed effects, year fixed effects, and country \times mother birth year fixed effects

Tables

Table 1: Balance in Covariates

	Dep. Var. : Postdiscovery (6m)					
	A: Prediscovery (All) & Postdiscovery (6m)			B: Prediscovery (6m) & Postdiscovery (6m)		
	N	Estimate	Std Error	N	Estimate	Std Error
Female	128950	0.00121	(0.00124)	10971	-0.00247	(0.00391)
Age	128950	0.0340	(0.139)	10971	-0.199	(0.360)
Employment	83589	0.0680**	(0.0314)	7130	0.0235	(0.0436)
No formal educ	128682	-0.0369	(0.0257)	10957	0.0365	(0.0211)
Informal edu	128682	-0.0227*	(0.0118)	10957	-0.00519	(0.00411)
Primary	128682	-0.0421***	(0.0134)	10957	-0.0127	(0.00864)
Secondary	128682	0.0707*	(0.0382)	10957	-0.00264	(0.0335)
Tertiary	128682	0.0310**	(0.0116)	10957	-0.0159***	(0.000368)
Rural	128950	0.0361	(0.0308)	10971	-0.0164	(0.0171)
Electricity in PSU	128950	0.0702	(0.0427)	10971	-0.00777	(0.0164)
Own a Radio	110350	0.000304	(0.0541)	10963	0.141*	(0.0661)
Own a TV	110264	0.0263	(0.0496)	10961	-0.00360	(0.00934)

Notes: The panels represent point estimates and standard errors of 13 regressions on Postdiscovery (6 month). Postdiscovery is a dummy equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. Column 1 compares individuals interviewed individuals interviewed within 6 months after a discovery with individuals interviewed before a discovery irrespective of the length of time. Column 2 however uses a strict window of 6 months pre and post a discovery, thus comparing individuals interviewed individuals interviewed within 6 months after a discovery with their counterparts interviewed within 6 months before a discovery. All regressions control for county fixed effect ensure that the covariate balance test is done between individuals interviewed in the same county. All columns are estimated using OLS. Robust standard errors clustered at county level in parenthesis

* Significant at 10 percent level

** Significant at 5 percent level

*** Significant at 1 percent level

Table 2: Oil Discoveries and Citizen Expectations

	Expectations on economic conditions			Expectations on living standards		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: (Giant/Subgiant) Discoveries</i>						
Postdiscovery	0.2647*** (0.0621)	0.2088*** (0.0450)	0.2140*** (0.0466)	0.3598*** (0.0234)	0.3584*** (0.0216)	0.3333*** (0.0178)
Discovery	-0.2451*** (0.0819)	-0.1968*** (0.0641)	-0.2180*** (0.0720)	-0.3170*** (0.0462)	-0.2795*** (0.0440)	-0.3035*** (0.0471)
Current econ conditions		0.2528*** (0.0139)	0.2514*** (0.0140)			
Current living standards					0.1921*** (0.0137)	0.1912*** (0.0131)
Mean dep. var	0.6096	0.6088	0.6055	0.6305	0.6307	0.6307
R-squared	0.0921	0.1465	0.1447	0.0929	0.1246	0.1263
<i>Panel B: Giant Discoveries</i>						
PostGiantdiscovery	0.3075*** (0.0291)	0.2753*** (0.0262)	0.2632*** (0.0204)	0.3584*** (0.0236)	0.3572*** (0.0218)	0.3319*** (0.0178)
Giant Discovery	-0.3105*** (0.0508)	-0.2501*** (0.0449)	-0.2768*** (0.0491)	-0.3152*** (0.0466)	-0.2780*** (0.0444)	-0.3016*** (0.0477)
Current econ conditions		0.2539*** (0.0142)	0.2520*** (0.0142)			
Current living standards					0.1922*** (0.0137)	0.1913*** (0.0131)
Mean dep. var	0.6096	0.6088	0.6055	0.6305	0.6307	0.6307
R-squared	0.0911	0.1459	0.1443	0.0928	0.1246	0.1262
Individual Ctrl	No	No	Yes	No	No	Yes
Community Ctrl	No	No	Yes	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Countries	34	34	34	33	33	33
No. of rounds	5	5	5	4	4	4
Observations	113565	112390	73339	85613	85359	56710

Notes: *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. *Postdiscovery* is a dummy equal 1 if the respondent was surveyed within 6 months after a discovery. *GiantDiscovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a giant discovery. *PostGiantdiscovery* is a dummy equal 1 if the respondent was surveyed within 6 months after a giant discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Expectations on living standards is a dummy variable equal to 1 if the respondent expects a better or much better living conditions in the 12 months following the survey and 0 if otherwise. Current econ condition is a dummy if the respondent rates the current economic conditions in the country as either fairly good or very good, and 0 if otherwise. Currently good living standards is a dummy if the respondent rates her current living conditions as either better or much better, and 0 if otherwise. Individual controls include age, household size, educational status, and gender. Community controls include access to electricity, and rural/urban status. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 3: Mechanisms: Access to media

Sample:	Radio				TV			
	Radio Ownership		Radio News		TV Ownership		TV News	
	Yes	No	Frequently	Less Frequent	Yes	No	Frequently	Less Frequent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A: Expectations on Economic Conditions</i>								
Postdiscovery	0.2659*** (0.0582)	0.2428*** (0.0878)	0.2347*** (0.0715)	0.2698*** (0.0532)	0.2801*** (0.0560)	0.2196*** (0.0788)	0.2561*** (0.0801)	0.2559*** (0.0370)
Discovery	-0.2457** (0.0920)	-0.2106** (0.0869)	-0.2295** (0.0948)	-0.2379*** (0.0686)	-0.2037** (0.0995)	-0.2420** (0.0919)	-0.1741 (0.1042)	-0.2847*** (0.0582)
Mean dep. var	0.5976	0.6213	0.6185	0.5831	0.6020	0.6065	0.6244	0.5951
R-squared	0.0963	0.1018	0.0917	0.1011	0.0945	0.1032	0.0919	0.0963
Observations	69013	28703	84659	28779	43023	54626	55717	57417
<i>Panel B: Expectations on Living Standards</i>								
Postdiscovery	0.3691*** (0.0040)	0.3095*** (0.0027)	0.3519*** (0.0256)	0.3400*** (0.0178)	0.4472*** (0.0068)	0.3493*** (0.0033)	0.4013*** (0.0232)	0.3342*** (0.0237)
Discovery	-0.3467*** (0.0526)	-0.2380*** (0.0450)	-0.3377*** (0.0443)	-0.2220*** (0.0512)	-0.4162*** (0.0771)	-0.3181*** (0.0443)	-0.3442*** (0.0563)	-0.3058*** (0.0421)
Mean dep. var	0.6257	0.6304	0.6440	0.5879	0.6352	0.6216	0.6582	0.6057
R-squared	0.0990	0.1092	0.0884	0.1186	0.1036	0.1032	0.0982	0.0930
Observations	49473	20237	64898	20606	28241	41408	40245	44986
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. *Expectations on economic conditions* is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. *Expectations on living standards* is a dummy variable equal to 1 if the respondent expects a better or much better living conditions in the 12 months following the survey and 0 if otherwise. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 4: Mechanisms: education, employment, and urbanization

Sample:	Education				Employment		Rural/Urban	
	Tertiary	Secondary	Primary	No educ	Employed	Unemployed	Rural	Urban
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A: Expectations on Economic Conditions</i>								
Postdiscovery	0.2140** (0.0835)	0.2947*** (0.0875)	0.2825*** (0.0438)	0.2205*** (0.0690)	0.2255*** (0.0590)	0.3244*** (0.0641)	0.2593*** (0.0424)	0.2637*** (0.0938)
Discovery	-0.1717 (0.1181)	-0.2855** (0.1050)	-0.2698*** (0.0661)	-0.2057** (0.0781)	-0.1959** (0.0883)	-0.3389*** (0.0888)	-0.2876*** (0.0651)	-0.1805 (0.1156)
Mean dep. var	0.5806	0.6076	0.5889	0.6730	0.5975	0.6159	0.6124	0.6055
R-squared	0.0741	0.0838	0.1116	0.1043	0.0882	0.0932	0.1038	0.0846
Observations	14641	43990	35287	19423	40326	33800	66465	47100
<i>Panel B: Expectations on Living Standards</i>								
Postdiscovery	0.2721*** (0.0636)	0.3173*** (0.0245)	0.3827*** (0.0241)	0.3113*** (0.0209)	0.2816*** (0.0206)	0.4046*** (0.0191)	0.3314*** (0.0259)	0.4131*** (0.0201)
Discovery	-0.3408*** (0.0737)	-0.3792*** (0.0621)	-0.3283*** (0.0406)	-0.1947*** (0.0418)	-0.2838*** (0.0568)	-0.3938*** (0.0527)	-0.3417*** (0.0460)	-0.2805*** (0.0532)
Mean dep. var	0.6391	0.6429	0.5948	0.6666	0.6323	0.6281	0.6240	0.6399
R-squared	0.0741	0.0766	0.1248	0.1264	0.0865	0.0989	0.1015	0.0887
Observations	10022	32930	28238	14254	30467	26474	50852	34761
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Expectations on living standards is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 5: Mechanisms: Millenials vs Generation X

	Expectations on Economic Conditions		Expectations on Living Standards	
	Millenials	Generation X	Millenials	Generation X
	(1)	(2)	(3)	(4)
Postdiscovery	0.2462*** (0.0868)	0.2912*** (0.0518)	0.3038*** (0.0122)	0.4083*** (0.0253)
Discovery	-0.2152** (0.1034)	-0.2632*** (0.0791)	-0.2584*** (0.0439)	-0.3480*** (0.0484)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mean dep. var	0.6341	0.5939	0.6752	0.6145
R-squared	0.0844	0.1019	0.0871	0.0981
Countries	34	34	33	33
# of Rounds	5	5	4	4
Observations	45339	56275	30419	44703

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 6: Mechanisms: Ethnic vs National Identity, & Perceived Marginalization

	Expectations on Economic Conditions				Expectations on Living Standards			
	Identity		Ethnic Group Marginalized		Identity		Ethnic Group Marginalized	
	Ethnic	National	Yes	No	Ethnic	National	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Postdiscovery	0.2820*** (0.0549)	0.2063** (0.0902)	0.2335** (0.0887)	0.2063** (0.0902)	0.4342*** (0.0521)	0.3533*** (0.0161)	0.2848*** (0.0409)	0.3533*** (0.0161)
Discovery	-0.1686*** (0.0577)	-0.1805* (0.1044)	-0.2986*** (0.0882)	-0.1805* (0.1044)	-0.2128*** (0.0664)	-0.2553*** (0.0470)	-0.3510*** (0.0534)	-0.2553*** (0.0470)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep. var	0.5887	0.6089	0.5172	0.6089	0.6202	0.6307	0.5466	0.6307
R-squared	0.0848	0.0869	0.0830	0.0869	0.0714	0.0843	0.0740	0.0843
Countries	31	31	30	31	28	28	28	28
# of Rounds	5	5	5	5	4	4	4	4
Observations	14733	79600	17111	79600	12227	59894	13700	59894

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

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Table 7: Mechanisms: Role of Institutions

	Dep Var: Expectations on Economic Conditions							
	Polity II Index				Democracy (0/1)			
	Median		75 th percentile		ANRR		BMR	
	High	Low	High	Low	Yes	No	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Postdiscovery	0.0203 (0.0171)	0.3085*** (0.0378)	0.0265 (0.0174)	0.2739*** (0.0794)	0.0192 (0.0164)	0.3085*** (0.0375)	0.0254 (0.0175)	0.3665*** (0.0748)
Discovery	0.0237 (0.0454)	-0.6693*** (0.0837)	0.0667 (0.0423)	-0.3780*** (0.0752)	0.0278 (0.0464)	-0.3242** (0.1502)	0.0856* (0.0393)	-0.3896*** (0.0667)
Mean dep. var	0.6188	0.5720	0.6376	0.5858	0.6257	0.5810	0.6307	0.5912
R-squared	0.0893	0.1364	0.0953	0.0995	0.0908	0.1199	0.0982	0.0994
# of Countries	20	12	13	17	19	15	13	21
# of Rounds	5	5	5	5	5	5	5	5
Observations	77602	33111	55753	49077	72602	40963	52677	60888

Notes: Polity II index and Democracy variables are measured in the pre-sample period (2001). For Polity II index, we classify countries based using either the median (columns 1-2) or 75th percentile (columns 3-4). Thus a country is classified as having High Polity index if its index is higher than the median (75th percentile) score for African countries, and Low if otherwise. The democracy measures are dummy variables with 0 being undemocratic and 1 being democratic. ANRR and BMR are the democracy measures obtained from [Acemoglu et al. \(2019\)](#) and [Boix et al. \(2013\)](#) respectively. *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 8: Oil Discoveries and Citizen Expectations: Excluding Election years

	Expectations on economic conditions			Expectations on living standards		
	(1)	(2)	(3)	(4)	(5)	(6)
Postdiscovery	0.1598*** (0.0567)	0.1307*** (0.0456)	0.1218** (0.0472)	0.2953*** (0.0253)	0.2896*** (0.0227)	0.2623*** (0.0169)
Discovery	-0.1664* (0.0833)	-0.1436** (0.0671)	-0.1557* (0.0775)	-0.2987*** (0.0605)	-0.2645*** (0.0561)	-0.2879*** (0.0616)
Current econ conditions		0.2467*** (0.0138)	0.2441*** (0.0141)			
Current living standards					0.1880*** (0.0148)	0.1885*** (0.0149)
Individual Ctrl	No	No	Yes	No	No	Yes
Community Ctrl	No	No	Yes	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep. var	0.6088	0.6081	0.6058	0.6232	0.6236	0.6230
R-squared	0.0954	0.1472	0.1445	0.1022	0.1324	0.1344
Countries	33	33	33	31	31	31
No. of rounds	5	5	5	4	4	4
Observations	90499	89539	57984	69256	69067	45824

Notes: Sample excludes respondents surveyed during a general election year as well as those interviewed one year before or after the election. *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Expectations on living standards is a dummy variable equal to 1 if the respondent expects a better or much better living conditions in the 12 months following the survey and 0 if otherwise. Current econ condition is a dummy if the respondent rates the current economic conditions in the country as either fairly good or very good, and 0 if otherwise. Currently good living standards is a dummy if the respondent rates her current living conditions as either better or much better, and 0 if otherwise. Individual controls include age, household size, educational status, and gender. Community controls include access to electricity, and rural/urban status. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis
* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 9: Oil Discoveries and Citizen Expectations

	Expectations on economic conditions			Expectations on living standards		
	(1)	(2)	(3)	(4)	(5)	(6)
Postdiscovery	0.1681** (0.0628)	0.1503** (0.0567)	0.1553** (0.0620)	0.3234*** (0.0461)	0.3246*** (0.0444)	0.3148*** (0.0349)
Discovery	-0.2428** (0.0807)	-0.2138** (0.0816)	-0.2108** (0.0706)	-0.3827*** (0.0978)	-0.3375*** (0.0975)	-0.3203*** (0.0842)
Current econ conditions		0.2282*** (0.0218)	0.2224*** (0.0230)			
Current living standards					0.1904*** (0.0259)	0.1901*** (0.0254)
Individual Ctrl	No	No	Yes	No	No	Yes
Community Ctrl	No	No	Yes	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean dep. var	0.6333	0.6330	0.6313	0.6402	0.6402	0.6449
R-squared	0.1244	0.1700	0.1758	0.1286	0.1598	0.1703
# of Countries	11	11	11	11	11	11
# of No. of rounds	5	5	5	4	4	4
Observations	31484	31174	20984	28487	28399	19321

Notes: Sample is restricted to respondents from countries that ever recorded a discovery during the study period. *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Expectations on living standards is a dummy variable equal to 1 if the respondent expects a better or much better living conditions in the 12 months following the survey and 0 if otherwise. Current econ condition is a dummy if the respondent rates the current economic conditions in the country as either fairly good or very good, and 0 if otherwise. Currently good living standards is a dummy if the respondent rates her current living conditions as either better or much better, and 0 if otherwise. Individual controls include age, household size, educational status, and gender. Community controls include access to electricity, and rural/urban status. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 10: Oil Discoveries and Citizens' Expectations (5 point scale)

	Expectations on economic conditions			Expectations on living standards		
	(1)	(2)	(3)	(4)	(5)	(6)
Postdiscovery	0.7964*** (0.1903)	0.6461*** (0.1425)	0.6695*** (0.1333)	1.0458*** (0.0591)	1.0418*** (0.0543)	1.0052*** (0.0470)
Discovery	-0.7912*** (0.2533)	-0.6603*** (0.2030)	-0.7163*** (0.2095)	-1.0096*** (0.1653)	-0.9089*** (0.1570)	-0.9383*** (0.1644)
Current econ conditions		0.6857*** (0.0401)	0.6831*** (0.0412)			
Current living standards					0.5187*** (0.0367)	0.5148*** (0.0346)
Individual Ctrl	No	No	Yes	No	No	Yes
Community Ctrl	No	No	Yes	No	No	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.1067	0.1738	0.1707	0.1135	0.1546	0.1560
# of Countries	34	34	34	33	33	33
# of Rounds	5	5	5	4	4	4
Observations	113565	112390	73339	85613	85359	56710

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within 6 months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within 6 months before or after a discovery. Expectations on economic conditions is a five-point scale ranking of respondent's expectation of economic conditions in the country in the 12 months following the survey and 0 if otherwise. It ranges from 1, meaning "much worse", to 5 meaning "much better". Expectations on living standards is a five-point scale ranking of respondent's expectation of living conditions in the country in the 12 months following the survey. It ranges from 1, meaning "much worse", to 5 meaning "much better". Current econ condition is a dummy if the respondent rates the current economic conditions in the country as either fairly good or very good, and 0 if otherwise. Currently good living standards is a dummy if the respondent rates her current living conditions as either better or much better, and 0 if otherwise. Individual controls include age, household size, educational status, and gender. Community controls include access to electricity, and rural/urban status. Country and survey year fixed effects are also included. Robust standard errors clustered at country level in parenthesis

* Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 11: Oil Discoveries and US Diversity Visa (DV) Lottery Applications

	Entrants per 1000 people		Total Applicants per 1000 people	
	(1)	(2)	(3)	(4)
Postdiscovery (Giant)	-3.5550** (1.6057)		-4.1194** (1.4991)	
Postdiscovery (Giant/Subgiant)		-3.0794** (1.3386)		-3.4741** (1.3534)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Mean dep. var	4.5989	4.5989	6.2006	6.2006
R-squared	0.6600	0.6602	0.6657	0.6657
Countries	49	49	49	49
Observations	571	571	571	571

Notes: *Postdiscovery(Giant)* is a dummy variable equal to 1 there was at least one giant oil & gas discovery during the past one year, while *Postdiscovery(Giant/Subgiant)* dummy variable equal to 1 there was at least one giant or subgiant oil & gas discovery during the past one year. *Entrants* refers to the number of principal applicants to the lottery, while the applicants dependents (i.e. spouse and children) are referred to as *Derivatives*. *TotalApplicants* therefore is the sum of *Entrants* and *Derivatives*. Our main outcome variables are normalized by population of the respective countries. Country and survey year fixed effects are also included. Standard errors reported in parenthesis are as in Discroll and Kraay (1998). * Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Table 12: Oil Discoveries and Fertility

	Birth (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Giant Discovery	0.0158** (0.0060)	0.0151** (0.0063)	0.0158** (0.0060)			
Discovery (Giant/Subgiant)				0.0110 (0.0095)	0.0108 (0.0099)	0.0110 (0.0095)
Mother FE	Yes	No	Yes	Yes	No	Yes
Mother YOB FE	Yes	Yes	No	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	Yes	No
Country × Mother YOB FE	No	No	Yes	No	No	Yes
Mean dep. var	0.1986	0.1986	0.1986	0.1986	0.1986	0.1986
R-squared	0.0805	0.0170	0.0805	0.0805	0.0170	0.0805
Countries	25	25	25	25	25	25
Observations	3895429	3895429	3895429	3895429	3895429	3895429

Notes: *GiantDiscovery* is a dummy variable equal to 1 there was at least one giant oil & gas discovery during the past one year, while *Discovery(Giant/Subgiant)* dummy variable equal to 1 there was at least one giant or subgiant oil & gas discovery during the past one year. Mother YOB FE is mother birth year fixed effects. Standard errors reported in parenthesis are clustered at country level. * Significant at 10 percent level ** Significant at 5 percent level *** Significant at 1 percent level

Appendix

Table 13: Oil Discoveries and Citizen Expectations

	Pre and Post discovery window:					
	6m	9m	12m	18m	24m	36m
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Expectations on Economic Conditions</i>						
Postdiscovery	0.2647*** (0.0621)	0.1886*** (0.0576)	0.1216* (0.0603)	0.0266 (0.0634)	-0.0143 (0.0627)	-0.0219 (0.0539)
Discovery	-0.2451*** (0.0819)	-0.2068** (0.0818)	-0.1542* (0.0848)	-0.1902** (0.0831)	-0.1382 (0.0912)	-0.1559* (0.0903)
Mean dep. var	0.6096	0.6049	0.6026	0.5959	0.6005	0.6048
R-squared	0.0921	0.0987	0.0968	0.0907	0.0886	0.0908
Observations	113565	116290	118300	128136	136251	139469
<i>Panel B: Expectations on Living Standards</i>						
Postdiscovery	0.3598*** (0.0234)	0.3909*** (0.0417)	0.1955 (0.1250)	0.0933 (0.0748)	-0.0083 (0.0741)	-0.0082 (0.0645)
Discovery	-0.3170*** (0.0462)	-0.3112*** (0.0446)	-0.1318 (0.1331)	-0.1942** (0.0916)	-0.1209 (0.0896)	-0.1485* (0.0832)
Mean dep. var	0.6096	0.6049	0.6026	0.5959	0.6005	0.6048
R-squared	0.0921	0.0987	0.0968	0.0907	0.0886	0.0908
Observations	85613	86522	86522	90598	96740	99958
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *Postdiscovery* is a dummy variable equal to 1 if the individual was interviewed within the respective months after a discovery and 0 if otherwise. *Discovery* is a dummy variable equal to 1 if the respondent was interviewed within the respective months before or after a discovery. Expectations on economic conditions is a dummy variable equal to 1 if the respondent expects a better or much better economic conditions in the 12 months following the survey and 0 if otherwise. Expectations on living standards is a dummy variable equal to 1 if the respondent expects a better or much better living conditions in the 12 months following the survey and 0 if otherwise. Each column is shows results from a separate regression. In each column, the control group consist of respondents interviewed in the respective months before a discovery. We also include respondents from countries that had no discoveries during the study period. Country and survey year fixed effects are also included. Robust standard errors clustered at PSU level in parenthesis

* Significant at 10 percent level

** Significant at 5 percent level

*** Significant at 1 percent level