

Causes and Consequences of Policy Uncertainty: Evidence from *McGirt vs. Oklahoma*

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Abstract: Economists agree that policy uncertainty should distort private investment but several questions remain. What causes empirically relevant uncertainty? And, if uncertainty distorts investment, does it do so by delaying, accelerating, or reducing it? We study these questions in the context of the July 2020 U.S. Supreme Court ruling in *McGirt vs. Oklahoma*. In a difficult-to-predict 5-4 decision, the court ruled the eastern half of Oklahoma is “Indian Country” rather than state land. Commentators, including Chief Justice Roberts, have since argued the ruling creates significant policy uncertainty over regulatory, taxing, and criminal law enforcement, and we find that media mentions of “uncertainty” with “Indian reservation” spiked with the ruling. But has the ruling truly impaired investment? To shed light on this question, we econometrically estimate its effects on Zillow home sales and prices, and on oil, gas, and renewable energy investments. We find no evidence that the ruling reduced home sale prices. There is, however, some evidence that it induced a race to extract oil in eastern Oklahoma.

1. Introduction

Economists agree that policy uncertainty distorts private investment but several questions remain. What causes empirically relevant uncertainty? How can it be measured? And, if uncertainty distorts investment, does it do so by delaying, accelerating, or reducing it?

We study these questions in the context of the July 2020 U.S. Supreme Court ruling in *McGirt vs. Oklahoma*. In a difficult-to-predict 5-4 decision, the court essentially ruled the eastern half of Oklahoma is “Indian Country” rather than state land.¹ This means that judicial, regulatory,

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¹ The term Indian country is defined in 18 U.S.C. § 1151 and 40 C.F.R. § 171.3 as: a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or

and taxing authority may pass from state control to a new combination of tribal and federal control. The eastern portion spans about 47 percent of the state (19 million acres) where almost two million people reside, approximately 85 percent who do not identify as American Indian.

The ruling was celebrated by tribes and supporters as restoring treaty rights established in 1832, but others raised concerns about the economic fallout. In his dissenting opinion, Chief Justice Roberts states the decision “creates significant uncertainty for the State’s continuing authority over any area that touches Indian affairs, ranging from zoning and taxation to family and environmental law.” Indeed, experts in Indian law are divided about how far-reaching the effects will be on matters ranging from taxing and regulatory powers to business licensing.

Perhaps the clearest change is that the ruling reduces the state’s reach in criminal jurisdiction. It gives the federal government jurisdiction to police and adjudicate a set of major crimes, and it gives tribal governments jurisdiction over a set of minor crimes. These jurisdictional changes are in the spotlight. Oklahoma’s governor filed more than thirty appeals between July 2020 and May 2022 arguing that crimes are not being prosecuted in tribal and federal courts and that violent criminals are being set free.² Tribes have countered, arguing that state officials are trying to spread fear and that tribal courts and federal district courts are fundamentally equipped to deal with the backlog and administer fair and predictable justice.³

The energy industry is also in the spotlight, with commentators arguing that oil, gas, and renewable companies should prepare for the prospect of a new regulatory regime, new taxes, and short-run uncertainty.⁴ Oklahoma’s Energy Secretary noted that mining companies “thought they were operating in the State of Oklahoma” and predicted they would reduce activity in response (*Wall Street Journal* 2021). Yet other commentators point out that Oklahoma tribes are not particularly politically liberal (Henderson 2020), and there is no indication that tribes plan to regulate or tax energy production more aggressively than the state.

without the limits of a state; and c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

² The US Department of Justice has echoed some of these concerns but focused on non-violent crime. It recently claimed that “as enforcement of non-violent crimes is relatively low, Oklahoma communities may see a surge in such crimes, and many people may not be held accountable for their criminal conduct due to resource constraints” (US Dept. of Justice 2023).

³ <https://www.pbs.org/newshour/nation/the-supreme-court-expanded-tribal-authority-across-oklahoma-now-the-state-wants-to-scale-it-back>

⁴ See, for example, “Oklahoma Oil and Gas Business Braces for Change in Wake of Supreme Court Decision” *JD Supra News*, July 16, 2020.

How are investors reacting? Although some media reports assert that uncertainty is impairing investment and commerce, there is limited systematic evidence to date.⁵ In the only empirical study of *McGirt* that we are aware of, Velchik and Zhang (2022) find no evidence that the ruling impaired employment or output in counties for which *McGirt* changed jurisdictional status through year-end 2021. The authors also find no evidence that *McGirt* caused stock prices to fall for publicly traded companies incorporated in Oklahoma.

We study the ruling's short-term effects using different data and econometric methods. To focus on the potential effects of uncertainty over how criminal law will be enforced and how criminal activity will respond, we have assembled micro-data on housing sales from the Zillow ZTrax database. The data enable us to account for a home's location and attributes (e.g., square footage) to study how sale prices changed after versus before the ruling in eastern versus western Oklahoma. If the *McGirt* ruling caused homeowners and potential home buyers to worry about the potential for more crime in eastern Oklahoma, we would expect those concerns to reduce residential asset values. This logic is consistent with a large literature concluding that heightened expectations of crime reduce housing values (e.g., Linden and Rockoff 2008, Mastrorocco and Minale 2018, Kim and Ok Lee 2018).

To study the short-run effects on energy investments, we have assembled data on oil and gas drilling from Oklahoma's oil and gas commission, and on planned renewable energy projects from the regional grid operator. We analyze the oil and gas data to test whether jurisdictional changes have affected sunk capital investment decisions on the margins of how many new wells to drill and the time elapsed from well starts to completions. We also evaluate investment in renewable energy projects to evaluate its responsiveness to jurisdictional changes. These tests focus on a particular type of economic investment – i.e., those that cannot be recovered in the event of a policy change – that are thought to be most sensitive to policy uncertainty (see Dixit and Pindyck 1994, Kellogg 2014). The logic is that, if *McGirt* caused meaningful regulatory or taxing uncertainty, it should have altered energy investments in the east relative to the west.

In general, we find very little evidence of a systematic negative response of investment to *McGirt*. Neither home prices nor sale quantities in eastern Oklahoma appear to have systematically changed after vs. before *McGirt* in eastern Oklahoma relative to before vs. after changes in western

⁵ See, for example, the *Wall Street Journal's* September 8, 2021 editorial board's article on "Justice Gorsuch Tears Up Oklahoma: His 5-4 *McGirt* opinion is causing havoc in the Sooner State."

Oklahoma. This null finding contrasts with the state of Oklahoma’s position that *McGirt* is causing chaos and extensive media coverage highlighting problems. The oil and gas results are nuanced. There is no evidence that the number of new wells decreased in eastern Oklahoma. On the contrary, there is some evidence that developers in the east adjusted by drilling more oil wells and drilling them more quickly. *McGirt* may have triggered a race to extract to avoid exposure to future regulations or taxes. Though this finding contrasts with concerns that *McGirt* would cause mining to stall, it is consistent with a branch of theory on how oil and gas investment responds to risk and uncertainty (Bohn and Deacon 2000).

Our findings contribute to a widely cited literature using the frequency of newspaper articles containing words such as “uncertainty” in combination with “regulation” and “taxing” to measure policy uncertainty (e.g., Baker et al. 2016). Applied to our setting, we find that such word combinations do become more frequently used in combination with words such as “Oklahoma” and “Indian Reservation” after versus before the *McGirt* decision. This indicates the *McGirt* decision would cause a newspaper-based uncertainty index to rise but also that, in contrast to Baker et al. (2016), the higher index does not obviously correspond to lower investment in Oklahoma.

Our study therefore raises questions about using newspaper articles to measure the true nature of policy uncertainty around *McGirt* on one hand, and the expected response of different investor types on the other. Our findings may suggest that at least residential investors think there is compatibility among tribal, federal, and state government incentives to set similar procedures, laws, and regulations to support public safety, the economy, and private property rights.

2. Background: Indian Reservations and *McGirt vs. Oklahoma*

Chief Justice John Marshall set the stage for present American Indian policy by declaring that tribes are sovereign nations. In his famous 1831 opinion in *Cherokee Nation vs. Georgia*, he likened Indian territories to “nations within a nation” but also stated that such areas were “domestic dependent nations.” Although implying that tribes had retained internal powers to govern themselves, Marshall described the relationship between tribes and the United States as “that of a ward to his guardian.”⁶

On the eve of the *McGirt* decision, the legacy of the Marshall ruling held sway over more than 300 federally recognized Indian reservations, the “nations within a nation.” Indian

⁶ See Fletcher (2006) and for a discussion of the Marshall decisions.

reservations are lands reserved for a tribe or tribes under treaty or other agreements with the United States, executive order, or federal statute. The federal government holds title to some reservation lands in trust on behalf of the tribe and its members, although many tracts on reservations are owned outright as private, fee simple title.⁷ The largest Indian reservation is the 16 million-acre Navajo Nation and the smallest is a 1.32 acre parcel in California where the Pit River Tribe's cemetery is located. Some reservations are the remnants of a tribe's original land base whereas others were created by the federal government for the resettling of Indigenous people forcibly relocated from their homelands. Not every federally recognized tribe has a reservation.

Federal Indian reservations are generally exempt from state jurisdiction except when Congress specifically authorizes such jurisdiction as it did with Public Law 280 in 1953. Due to the Major Crimes Act, the federal government has jurisdiction over major crimes (e.g., murder and rape) committed on Indian reservations whereas tribes have jurisdiction over minor crimes. The exception is for most reservations in Public Law 280 states (e.g., California, Minnesota, Nebraska, Oregon, Wisconsin) where states have jurisdiction over major crimes and minor crimes. On PL 280 reservations, states also claim jurisdiction over private civil contract disputes (e.g., a loan contract from a bank) involving a tribal member whereas tribes have exclusive jurisdiction over such matters on non-PL 280 reservations. PL 280 status does not give states jurisdiction to tax or regulate American Indians on federally recognized reservations (see, e.g., Goldberg-Ambrose 1997).

The dispute in *McGirt vs. Oklahoma* centered on whether land in eastern Oklahoma should be considered federally recognized Indian reservation land.⁸ The case was triggered by a jurisdictional dispute over the crimes of Jimcy McGirt, one of several American Indians convicted in state courts for crimes committed on lands that were part of former federally recognized Indian reservations. He unsuccessfully argued in state post-conviction proceedings that the State lacked jurisdiction to prosecute him because he is an enrolled member of the Seminole Nation, and his crimes took place on the Creek Reservation.

The Supreme Court revisited the question of what constitutes "Indian country" in Oklahoma and their ruling ultimately implied that six Indian tribes held sovereignty over the

⁷ The resulting mosaic of ownership is due to the "allotment era" of 1887-1934 that privatized some reservation lands and the subsequent Indian Reorganization Act of 1934 that froze allotted lands in federal trusteeship that had not yet been fully privatized (see, e.g., Anderson and Lueck 1992, Leonard et al. 2020).

⁸ See Miller and Dolan (2022) for a comprehensive review of the case, the ruling, and its legal impacts.

eastern half of Oklahoma (see Figure 1). According to the Court, this 19 million-acre territory – which includes the city of Tulsa – should have remained a federally recognized Indian reservation after being created by an 1832 treaty. For its part, Oklahoma argued that Congress either i) effectively dissolved the reservation through various Acts or ii) never established a reservation but instead created a “dependent Indian community.”⁹ In one of the arguments most relevant to the issue of land-based and site-specific investments (e.g., residential homes and oil and gas wells), Oklahoma unsuccessfully contended that Congress ended the reservations during the “allotment era” of 1887-1934 when communal land on many reservations was subdivided, allotted, and privatized via the removal of trusteeship.¹⁰ In the end, the Court’s majority said that the U.S. government must live up to its promise and abide by the treaties meaning the state would lose the jurisdiction it had long claimed.¹¹ Though the case focused on criminal law on one reservation, it quickly applied to the other five reservations and may apply to civil law.

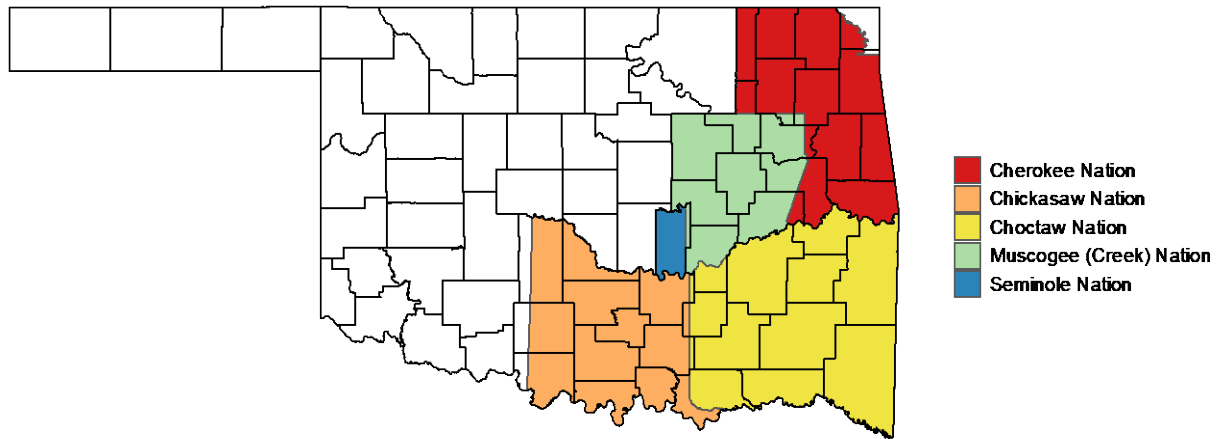
While the legal implications of the *McGirt* decision are potentially far reaching and uncertain, the economic implications are even less clear. In his dissenting opinion, Chief Justice Roberts worried that the decision “creates significant uncertainty for the State’s continuing authority over any area that touches Indian affairs, ranging from zoning and taxation to family and environmental law.” Roberts further argued that the decision adds complicated layers of governance “over numerous areas of life – including powers over non-Indian citizens and businesses.” Roberts also dismissed arguments that the effects will be minimized if Oklahoma and Tribes continue with a spirit of cooperation embedded in intergovernmental agreements because those are “small potatoes compared to what will be necessary to address the disruption inflicted” by the decision.

⁹ https://www.supremecourt.gov/opinions/19pdf/18-9526_9okb.pdf

¹⁰ Unlike most reservations, the reservations in eastern Oklahoma were almost fully allotted and privatized into fee-simple tracts (see, e.g., Leonard et al. 2020).

¹¹ Justice Neil Gorsuch stated the following in the majority opinion. “On the far end of the Trail of Tears was a promise. Forced to leave their ancestral lands in Georgia and Alabama, the Creek Nation received assurances that their new lands in the West would be secure forever... The government further promised that “[no] State or Territory [shall] ever have a right to pass laws for the government of such Indians, but they shall be allowed to govern themselves (1832 Treaty, Art. XIV, 7 Stat. 368). Today we are asked whether the land these treaties promised remains an Indian reservation for purposes of federal criminal law. Because Congress has not said otherwise, we hold the government to its word.”

Figure 1
Restored Indian Reservations in Oklahoma



Notes: The map shows the five Indian nations declared to be Indian Country in *McGirt vs. Oklahoma* and related court decisions. The Indian nation boundaries generally follow county boundaries with some exceptions. Data from the State of Oklahoma via OKMaps. We exclude the Quapaw Reservation, a small Nation in the northeast corner of Oklahoma. An Oklahoma appellate court found in October 2021 that the Quapaw Reservation had also never been disestablished (Killman 2021).

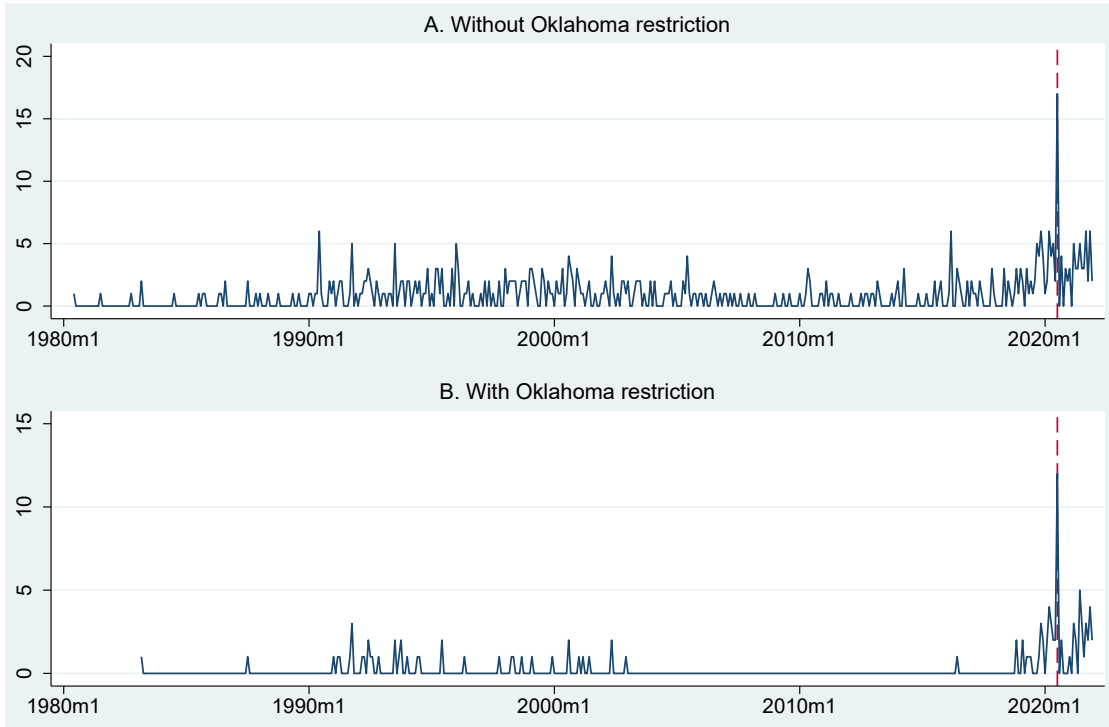
The majority opinion, penned by Justice Gorsuch, is less consequentialist. He wrote: “we do not pretend to foretell the future and we proceed well aware of the potential for cost and conflict around jurisdictional boundaries, especially ones that have gone unappreciated for so long. But is unclear why pessimism should rule the day. . . . No one before us claims that the spirit of good faith, ‘comity and cooperative sovereignty’ behind these agreements will be imperiled by an adverse decision for the State today any more than it might be by a favorable one.”¹²

We evaluated press coverage before and after *McGirt* to assess how the ruling was portrayed in the press and to evaluate the extent to which the ruling may have surprised investors. Figure 2 summarizes media reactions in the top American newspapers employed by Baker et al. (2016). Panel A plots monthly articles containing words such as “Uncertainty” AND “Indian Reservation”. There is a clear surge – from an average of 0.9 per month over Jan. 1980 -Dec. 2021 to 17 in July 2020. Panel B requires the text to also include “Oklahoma.” This reduces the average

¹² The majority opinion essentially states that economic fallout, whatever it may be, should not be a criterion for the decision. This view is similar to Merrill and Smith (2007, 1890-91) who write: “When proposals are made to . . . restore land taken from Native American tribes in violation of treaty rights, few voices are raised questioning the wisdom of trying to sort out the claims to these assets, which were taken many decades ago. Wrongful dispossession of property should be vindicated, apparently without regard to the costs or inconvenience of attempting to do so after a long passage of time.”

to 0.23 articles with a surge to 12 in July 2020. There was a slight build up in articles preceding *McGirt* over Jan. -June 2020, when the number averaged 2.2 per month.

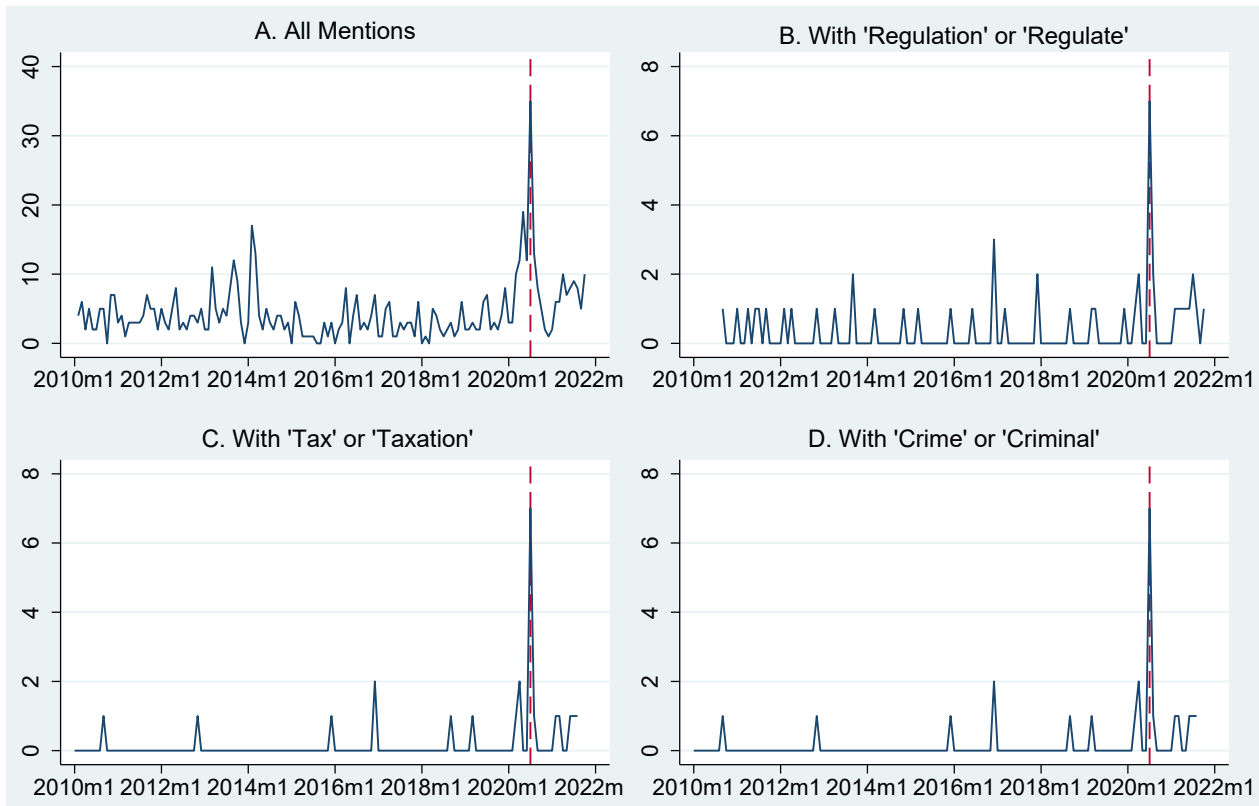
Figure 2:
National Newspaper Articles Mentioning Uncertainty & Indian Reservation



Notes: Panel A counts the monthly number of national newspaper articles mentioning (“uncertain” OR “uncertainty”) AND (“Indian Reservations” OR “Indian Reservation” OR “Native American Reservation” OR “Tribal Reservation”) AND (“regulation” OR “regulatory” OR “tax” OR “taxation” OR “taxes” OR “jurisdiction”). Panel B adds AND “Oklahoma”. The 9 outlets included in the search are USA Today, Chicago Tribune, Washington Post, Los Angeles Times, Boston Globe, San Francisco Chronicle, Dallas Morning News, New York Times, and Wall Street Journal. Baker et al. (2016) use these 9 newspapers plus the Miami Herald. The largest spike is during July 2020, the month of the *McGirt* ruling.

Figure 3 counts monthly articles from all newspapers in the Newsstream database since 2010 using similar search terms. Panels B-D show that articles containing words related to regulation, taxes, and crime also spiked in July 2020. The main difference across panels is that Panel B suggests an underlying current of uncertainty around regulatory matters on Indian reservations since 2010 whereas Panels C-D show little evidence of tax or criminal jurisdictional uncertainty prior to *McGirt*. We speculate that regulatory uncertainty concerned uncertainty around authority over tribal casinos and oil and gas development whereas taxing and criminal jurisdiction were relatively settled prior to *McGirt*.

Figure 3
Count of All Newspaper Articles Mentioning Uncertainty & Reservations & Oklahoma



Notes: Panel A counts the monthly number of articles mentioning “Oklahoma” AND (“uncertain” OR “uncertainty”) AND (“Indian Reservations” OR “Indian Reservation” OR “Native American” OR “Tribal” OR “Tribe” OR “Tribes”) AND (“regulation” OR “regulatory” OR “tax” OR “taxation” OR “taxes” OR “jurisdiction”). Panel B counts the number that mention “regulation” or “regulate”. Panel C counts the number that mention “tax” or “taxation”. Panel D counts the number that mention “crime” or “criminal.” The dashed vertical line indicates July 2020, when the *McGirt* vs. Oklahoma decision was made. The searches include all possible newspaper sources in the Newsstream database (2,485 newspaper publications).

Figures 2 and 3 highlight two important features of the *McGirt* ruling. First, among Indian reservation policies, the amount of uncertainty-focused media coverage it generated was unprecedented. Second, the ruling was a surprise – or at least it was difficult to predict - because coverage of uncertainty spiked after rather than before the ruling.¹³ The first feature suggests the ruling is a good test case for estimating an upper bound effect on how investors have reacted to jurisdictional uncertainty on Indian reservations in other settings. The second feature suggests that

¹³ For example, Figures 2 and 3 provide little evidence of a spike in coverage of “uncertainty” after the 10th Circuit Court’s 2017 *Murphy v. Royal* decision or the US Supreme Court’s 2018 deadlocked 4-to-4 decision in *Sharp v. Murphy*. Both cases considered whether areas in eastern Oklahoma are Indian Country (see Velchik and Zhang 2022).

our empirical approach of treating *McGirt* as a surprise “event” is valid. More generally, Figures 2 and 3 raise questions about when uncertainty conveyed in the media is a good predictor of on-the-ground residential and energy investments. To frame our empirical study, we first review some of the relevant literature on uncertainty, sovereignty, and investment.

3. Literature on Uncertainty, Sovereignty, and Investment

In the investment-under-uncertainty literature (e.g., Dixit and Pindyck 1994, Bulan et al. 2009), the irreversibility of investments causes investors to delay action when expectations about future investment returns become less predictable. Irreversible investments are sunk because their costs cannot be recovered by withdrawing an investment after a bad future scenario reveals itself. This logic implies that higher uncertainty will especially delay investments that require a high degree of sunk capital as discussed below.

Unlike much of the literature on investment-under-uncertainty, our study focuses on uncertainty from a discrete policy change rather than from a continuous factor that affects profitability, e.g., the future oil price in Kellogg (2014).¹⁴ Our focus on a specific discrete policy change is similar to Handley and Limão (2017). They study China’s WTO accession, an event that had little effect on existing tariffs but provided certainty about future policy, and find this reduction in trade policy uncertainty led to significant increase in exports.

How might the expectation of a political regime switch, such as that triggered by *McGirt*, affect uncertainty and investment? Julio and Yook (2012) find that investment falls around national elections and Durnev (2010) finds that firm-level investment expenditures are less sensitive to market forces during election years. The finding is stronger in countries with a less stable rule of law, meaning that policy uncertainty is fundamentally linked to perceptions of government stability. Voight et. al. (2007), for example, find evidence that nations perceived to have an unpredictable rule of law can achieve higher levels of foreign investment by credibly contracting out jurisdiction to another sovereign nation that is perceived to be more stable.¹⁵ With respect to investments in natural resources, Bohn and Deacon (2000) demonstrate theoretically that oil

¹⁴ Kellogg (2014) shows that oil well drilling – which requires large sunk capital investments – is reduced when there are increases in oil price volatility even when holding constant the expected future price of oil.

¹⁵ Specifically, Voight et. al. (2007) find that the former colonies still bound to British Privy Council appellate courts have achieved higher levels of investment when compared to former British colonies with independent local court systems.

production could increase or decrease when national governments provide less ownership security to private investors. On one hand, insecurity will decrease long-run investment in oil extraction capital (e.g., exploration and research and development). On the other hand, insecurity will increase the pace of production in an attempt to extract more oil in the short run. These studies indicate that expectations of regime switching, especially from political regimes perceived to be stable and predictable to regimes perceived to be unstable, is likely to decrease long-run investment but could accelerate short-run activity in a race to produce before circumstances change.

The literature on regime switching and perceived stability is relevant to our study because i) the *McGirt* ruling signaled a jurisdictional switch (e.g., from the state of Oklahoma to tribes) and ii) because some investors believe tribal governments and tribal courts are less predictable than state governments and courts. In this sense, the newly recognized sovereignty could deter investment in eastern Oklahoma.¹⁶ Indeed, due to their small size, hindered sovereignty, and constrained resources over the years, tribes have much less written law for investors to rely upon and much less precedent to support that which is written (see Cooter and Fikentscher 2008).¹⁷ Champagne (2004) argues this is consequential for investment because “private businesses need predictable, stable legal and political environments ... to foster a stable capitalist business climate.”¹⁸ To reduce uncertainty, outside investors may have to undertake the cost of learning how each tribe might choose to adjudicate crime and regulate and tax commerce, but these learning

¹⁶ The economics literature suggests that sovereignty can be both an asset and a liability for encouraging investment and economic development. In a general context, North (1981) and Alesina and Spolaore (2003) point out that sovereignty is an asset because it allows rules, laws, and compliance procedures befitting local culture to evolve without interference from outsiders. These researchers also note that sovereignty can be a liability if domestic governments cannot effectively provide a predictable legal infrastructure. Cornell and Kalt (2000) study the same tradeoffs in a Native American context. They argue that sovereignty is an asset on Indian reservations because it lets tribes resolve disputes in ways that match indigenous norms of legitimacy. But they also find that sovereignty can be a liability if tribes cannot create and maintain reliable political and legal institutions. Similarly, Haddock and Miller (2006, 194) argue that tribal sovereignty can be a liability when it threatens “those who might most aid impoverished Indians, namely, potential investors.”

¹⁷ Cooter and Fikentscher note that written commercial laws are absent on some reservations and legal codes are often not available in public places when they exist. Where there is precedent, “tribal judges seldom document their decisions in writings that outsiders can access” (p. 31). The emphasis on uncertainty is also supported by a survey of non-Indian lenders concluding that many think that “Tribal governments had not developed or clearly defined the legal infrastructure for the enforcement of contracts” (Native American Lending Study 2001, 24).

¹⁸ There is concern from non-Indian lenders that tribal courts may be biased against their interests when trying to secure debt repayments from American Indian borrowers. Whether or not this is true or overblown, the perception appears to be widespread. One tribal justice attorney is quoted in Carpenter and Riley (2019, 834) as saying the following: “I’m amazed by the number of attorneys who have told me they represent a bank, and they make no attempt to repossess collateral or foreclose on properties because they say they have understood that the tribal court is not available to provide a remedy to a non-member. Then they come into court and they realize that the system is actually more creditor-friendly than the state court system.”

costs are sunk after making them and could therefore reduce investment. Of course, these effects on investment depend on how tribal institutions compare to those of the state, and Oklahoma does poorly in rankings of state legal systems (see Choi et al. 2009, Murphy 2020).

There is some empirical evidence on the effects of state jurisdiction. This literature is based on P.L. 280, which, as discussed above, is a federal law passed in 1953 that affected Indian reservation jurisdiction in certain states. It gave states jurisdiction over criminal offenses (major and minor) and over some civil disputes between Indians and non-Indians (e.g., over business and credit contracts). There is case-study evidence that the transfer of criminal jurisdiction lessened the quality of criminal law enforcement for Native Americans on reservations (e.g., Goldberg and Singleton 2008). Most of the literature in economics, finance, and political science suggests the jurisdictional change over contract disputes positively affected access to credit and business investment for American Indians on reservations (e.g., Anderson and Parker 2008, Parker 2012, Wellhausen 2017, Brown et. al 2017, Brown et al. 2019).¹⁹ These results suggest that non-Indian investors have, at least historically, preferred state jurisdiction over business and credit contracts when compared to tribal jurisdiction. It should be noted that the economic evidence comes from years past when tribes would have been much less financially and administratively equipped to run court systems when compared to today, and before tribes had organized to establish secured transaction laws to provide investment security as many have done in recent years (Dippel et al. 2021).²⁰

With respect to natural resources, Haddock (1994) theorizes about the economic fallout of the 1982 US Supreme Court ruling in *Merrion v. Jicarilla Apache Tribe*. The ruling affirmed tribal taxing rights over oil and gas to tribes for production on Indian reservations, and Haddock argues this deterred oil and gas investment throughout Indian Country. According to Haddock, oil development requires a “staggering” amount of sunk investment that is geographically immobile and hence exposed to future changes in taxing policy. Though Haddock does not provide empirical estimates, his hypothesis – that tribes have difficulty attracting sunk investment (e.g., exploration for oil and gas on reservations) in light of dual taxing power with the state - is one possible

¹⁹ Unlike the papers cited above, which use reservation or individual level data, Dimitrova et al. (2014) use county-level data and show that, at the county level, income growth was negatively related to containing a PL 280 reservation over about 1950 to 1980. Counties included in the sample had American Indian populations of 5% or higher.

²⁰ There remains uncertainty about the extent to which these approaches will provide outside contractors with sufficient confidence to lend on reservations, but preliminary evidence is encouraging (see Dippel et al. 2021).

explanation for why oil and gas development has been limited on American Indian reservations despite favorable endowments.²¹ Oklahoma has an active oil and gas industry that, according to Haddock’s logic, may negatively react to *McGirt*.²² To be clear, any uncertainty about future taxation emanates from two sources: will courts allow dual taxation and, if they do, what will the state and tribes taxing decisions look like?

To summarize, a strand of literature implies that *McGirt* will cause policy uncertainty, and that policy uncertainty will likely delay or stunt long-run investment in eastern Oklahoma, especially site-specific and immobile investments such as those required for oil, gas, and renewable energy. The short-run effects could be different than the long-run effects. For example, investors might react by hastening production in the short-run in an attempt to lock-in current regulatory and taxing policy and avoid future uncertainty.

There is, however, other literature suggesting that *McGirt* will have minimal effects. In one of the only empirical studies of *McGirt*, Velchik and Zhang (2022) find no evidence that the ruling impaired employment or output in counties for which *McGirt* changed jurisdictional status. The authors also find no evidence that *McGirt* caused stock prices to fall for publicly traded companies incorporated in Oklahoma.

Dramatic predictions about the effects of *McGirt* on economic uncertainty could be overblown if a) tribes can credibly signal that they will not change policies even if fully authorized to do so or b) if tribes and the state can quickly work out cooperative agreements that stabilize expectations. This was essentially the argument that Chief Justice Roberts treated with skepticism: that Oklahoma and Tribes will continue with a spirit of cooperation embedded in intergovernmental agreements. It is also the sentiment in the following statement issued by the state and the affected tribes after the ruling:

²¹ According to data cited in Regan and Anderson (2014, 196), reservations “contain almost 30% of the nation’s coal reserves west of the Mississippi, 50% of potential uranium reserves, and 20% of know oil and gas reserves.” There are several alternative reasons why oil and gas development on Indian reservations has been low including exposure to double-taxation by the state and tribe (Crepelle 2022), a cumbersome federal bureaucratic oversight over resource development (Regan and Anderson 2014, Crepelle 2022), a lack of tribal interest, and a highly fragmented land ownership base (see Leonard and Parker 2021).

²² Keay and Metcalf (2011) use an event study framework to study how Canadian Supreme Court decisions on Indigenous land claims affected the security of property rights to forest land and the stock value of timber companies. In general, they find that stock values increased with increased clarity over ownership claims, but that the assessments from four different court rulings vary and preclude any “simplistic conclusions about the impact of insecure resource rights.”

"The nations and the state are committed to implementing a framework of shared jurisdiction that will preserve sovereign interests and rights to self-government while affirming jurisdictional understandings, procedures, laws, and regulations that support public safety, our economy, and private property rights. We will continue our work, confident that we can accomplish more together than any of us could alone" (Wolf and Johnson 2020).

Evidence that cooperation is taking place is provided by Orr and Orr (2021, 426). They note that, in an attempt to "mitigate the significant costs of administering" the eastern half of Oklahoma, the tribes in Oklahoma have "initiated negotiations with the state of Oklahoma and local municipalities to clarify jurisdiction and coordinate administrative responsibilities."²³ As Miller (2022) notes, tribes can use sovereignty in different ways to wield development, including waiving sovereign immunity to attract investment.

Further evidence of cooperation and diminished uncertainty comes from national and, especially, local newspaper headlines since the McGirt ruling. We evaluated the total number of headlines with the words "McGirt" AND ("Uncertainty" OR "Uncertain) and the total number of headlines with the word "McGirt." The number that reference uncertainty as a percentage of the total mentioning McGirt provides an indication of how much discussions about the case are focused on uncertainty. This percentage peaks at almost 20% during 2020 and then settles between 5% and 10% during 2021. The declining reference to uncertainty – particularly in local newspapers such those representing Tulsa and Oklahoma City – suggests that stakeholders may be moving forward with practical solutions that are reducing uncertainty.

4. Empirical Analysis of Home Sales

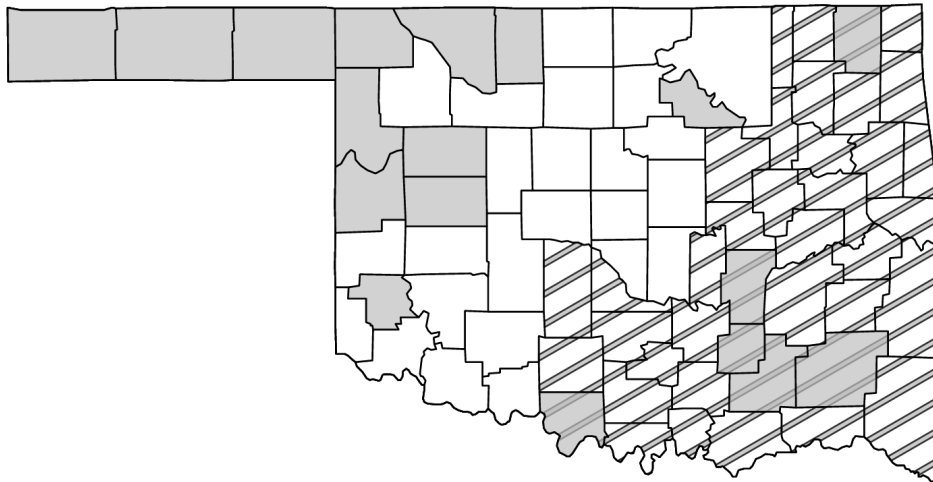
If the McGirt ruling caused homeowners and potential home buyers to worry about the potential for more crime and chaos in neighborhoods, we would expect those concerns to be reflected in housing market outcomes. For example, concerned homeowners would be more likely to sell their home in McGirt affected areas. And concerned home buyers would be less likely to buy homes in McGirt affected areas. The result would be an increase in supply and a decrease in demand. This would lower sale prices and have an ambiguous effect on the volume of sales.

²³ Orr and Orr (2021) further note that these practical and cooperative decisions by tribal leaders are often opposed by more radical scholars and activists who perceive negotiations and compromises as a rejection of greater jurisdictional sovereignty.

Indeed, economic research often concludes that expectations of crime are capitalized in a reduction of housing values (e.g., Linden and Rockoff 2008, Mastrococco and Minale 2018, Kim and Ok Lee 2018).

To measure how the *McGirt* ruling was capitalized into home values, we use home sales transaction data. These data come from the April 2022 version of Zillow’s ZTRAX database, which is the latest currently available. The data include transactions for 59 of Oklahoma’s 77 counties (see Figure 4). We exclude non-arms-length transactions, transactions for multi-family or non-residential properties, and the handful of transactions with a sales price over ten million dollars. We combine the data with home characteristics from Zillow’s assessor database. While the assessor database includes many characteristics, only a few of them are collected for almost all transactions. To avoid dropping many observations, we only control for the year the house was built and the home’s square footage. Because there appear to be missing records for some counties and months before 2018, we focus on the period from January 1, 2018 through December 31, 2021 for this analysis.

Figure 4
Oklahoma Counties in Zillow’s ZTrax Data

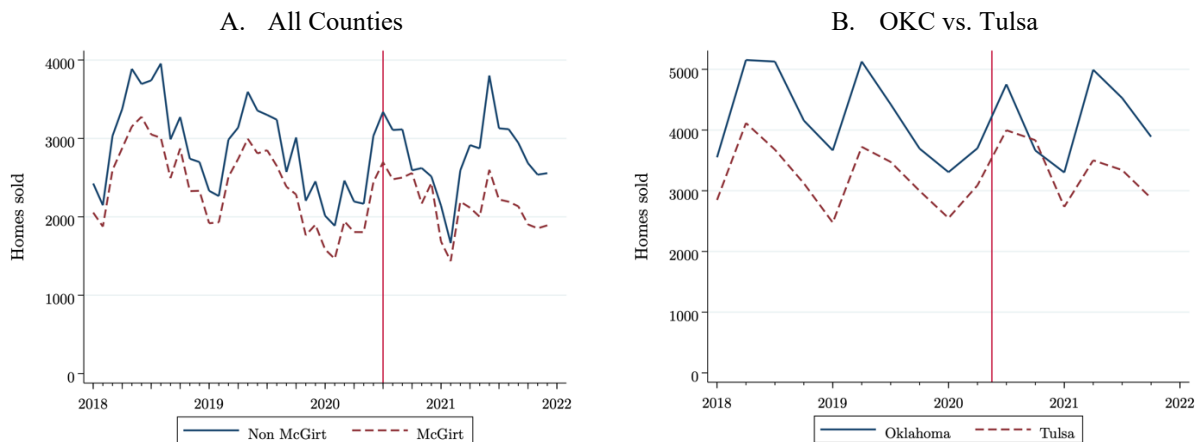


Notes: The gray shaded counties lack Zillow ZTrax data and are omitted from the analysis. Twelve of the 38 non-McGirt counties lack data and 6 of the 38 McGirt counties lack data. McGirt counties are shaded with stripes.

The left panel of Figure 5 plots the time series of home sales separately for areas where Indian reservation status was restored as a result of the McGirt decision and areas where it was not. We see that, prior to the McGirt ruling, the time-series of monthly sales for McGirt and non-McGirt counties were similar. There is no noticeable decrease in McGirt affected areas after the

McGirt ruling. Panel B compares the two counties with the largest cities in Oklahoma, Tulsa and Oklahoma counties. Tulsa is one of the McGirt counties, while Oklahoma County is not. If anything, the figure suggests there may be relatively more home sales in Tulsa during the six months following the ruling when compared to Oklahoma City.

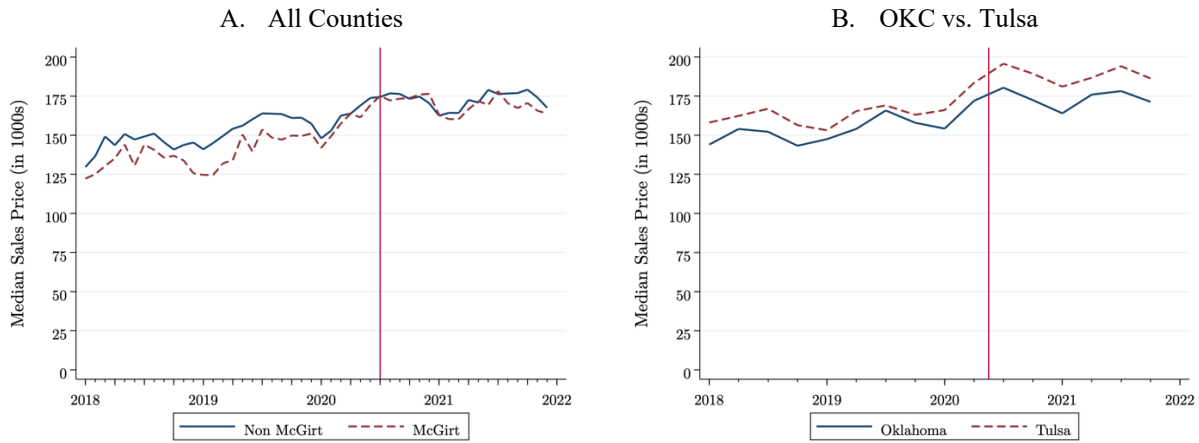
Figure 5
Number of Home Sales in Oklahoma



Notes: Panel A shows monthly counts of single-family home sales, plotted separately for counties affected by the McGirt decision and those that were not. The count only includes arms-length transactions with non-missing prices. The vertical line represents July 2020, the month of the McGirt ruling. Panel B shows quarterly counts of home sales for Tulsa and Oklahoma counties. Tulsa was affected by McGirt, but Oklahoma City was not. The vertical line appears between the 2nd and 3rd quarter of 2020, approximately the time of the McGirt ruling.

The data on home sales prices are similar. Figure 6 shows that prices for McGirt and non-McGirt counties track each other throughout the period, and that the relationship across county types looks similar before versus after the ruling. One caveat here is that control group of counties might be contaminated by the treatment if the McGirt ruling caused home demand to shift to neighboring counties. This would inflate the price in the control relative to the treatment and exaggerate any negative estimated effect of McGirt on sale prices in McGirt counties. We discuss this issue further below.

Figure 6
Median Home Sales Prices in Oklahoma



Notes: Panel A shows monthly median home sales prices, plotted separately for counties affected by the McGirt decision and those that were not. The vertical line represents July 2020, the month of the McGirt ruling. Panel B shows quarterly median home sales prices for Tulsa and Oklahoma counties. Tulsa was affected by McGirt, but Oklahoma City was not. The vertical line appears between the 2nd and 3rd quarter of 2020, approximately the time of the McGirt ruling.

To test for the effects of McGirt more formally, we estimate a standard difference-in-difference regression model for each outcome where we compare the McGirt to non-McGirt counties before and after the ruling. We include county, year, and month-of-year fixed effects in all specifications to control for general trends in real estate markets that are similar across the state. In some specifications, we also control for basic home characteristics (square footage and year built).

As Table 1 shows, there is not a statistically significant impact of the McGirt ruling on home sales in McGirt counties relative to non-McGirt counties. The dependent variable is the count of monthly home sales at the county level. The point estimates are insignificant whether or not we log the dependent variable and whether or not we control for housing characteristics. The estimated effects in columns 1 and 2 are positive but small: an increase of 5 sales amounts to only a 0.02 standard deviation in the distribution of sales counts. The estimated effects for the log specification in columns 3 and 4 are small and negative.

Table 1
County Level Estimates of Volume of Home Sales

	(1)	(2)	(3)	(4)
	# of Sales	# of Sales	ln(# of Sales)	ln(# of Sales)
McGirt Treat	5.31 (5.19)	5.41 (5.19)	-0.040 (0.088)	-0.039 (0.088)
County FE	x	x	x	x
Month & Yr FE	x	x	x	x
Property Chars.		x		x
Observations	2,801	2,801	2,768	2,768
R-squared	0.963	0.963	0.917	0.917

Notes: The dependent variable is the count of monthly home sales at the county-level. Data come from Zillow for January 2018-December 2021. The sample includes sales for single-family homes and is limited to arms-length transactions with non-missing price data. Given these restrictions, a handful of county-months have zero sales. Property Chars. are county-month level averages of square footage, year built, and year built squared. The mean number of sales is 89.3 with a standard deviation of 237. McGirt Treat is an indicator for a McGirt affected county in July 2020 or later. Standard errors in parentheses; clustered by county. * p<0.1, ** p<0.05, *** p<0.01.

Table 2 shows a similar null effect on home sale prices. For these regressions, the dependent variable is observed at the level of the 246,466 individual home sales transactions recorded in ZTrax from 2018-2021. All the point estimates are positive, and none are close to statistically significant. From column 4, the 95 percent confidence interval for the effect of McGirt on home prices is a decrease of 2.7% to an increase of 3.6%. In other words, the evidence of a null effect is strong and not simply a result of a large confidence interval.

To summarize, there is little evidence that the *McGirt* ruling differentially affected the volume of home sales or sale prices in McGirt vs. non-McGirt counties. Moreover, because the McGirt treatment could have affected outcomes in non-McGirt counties, e.g., the McGirt decision may have caused home buyers to substitute from eastern to western Oklahoma, we can interpret the magnitude of these estimates as upper bounds.²⁴

²⁴ This would not be true if the *McGirt* ruling caused demand for housing to fall in western Oklahoma, perhaps due to concerns that the criminal and investment climate in the entire state was affected. While we cannot rule out this possibility, it seems unlikely given the clear spatial boundaries of reservation and non-reservation land.

Table 2
Estimates of Home Sale Prices

	(1)	(2)	(3)	(4)
	Sales Price	Sales Price	ln(Sales Price)	ln(Sales Price)
McGirt Treat	4.04 (2.56)	1.63 (3.05)	0.015 (0.017)	0.004 (0.016)
County FE	x	x	x	x
Month & Yr FE	x	x	x	x
Property Chars.		x		x
Observations	246,466	246,466	246,466	246,466
R-squared	0.060	0.440	0.127	0.432

Notes: The dependent variable is homes sales price in 1,000s of Jan 2021 dollars. Data come from Zillow from January 2018-December 2021. The sample includes sales for single-family homes and limited to arms-length transactions with non-missing price data. Property Chars. are square footage, year built, and year built squared. The sample is limited to transactions with non-missing property characteristics. The mean sales price is \$183,284 with a standard deviation of \$165,815. McGirt Treat is an indicator for a McGirt affected county after July 9, 2020. Standard errors in parentheses; clustered by county. * p<0.1, ** p<0.05, *** p<0.01.

5. Empirical Analysis of Energy Investments

The oil, gas, and renewable energy sectors in Oklahoma could be affected by the McGirt ruling not because of concerns over crime enforcement, but because the ruling creates uncertainty about regulatory and tax changes. Media headlines such as “Oklahoma Oil and Gas Business Braces for Change in Wake of Supreme Court Decision” indicate industry concerns. The report attached to the headline suggests that “oil and gas businesses in Oklahoma may face a number of new regulatory issues concerning natural resource development, including the prospect of overlapping or conflicting regulation.” It also suggests that oil and gas businesses in eastern Oklahoma may face higher taxes on non-Indian oil and gas leases.²⁵

As noted in Section 3, an industry response to heightened uncertainty could play out in nuanced ways. A critical issue here is that years of litigation may be necessary before the practical impact of *McGirt* on regulatory and taxing policy towards oil and gas is revealed. The theoretical framing in Bohn and Deacon (2000) suggests ways that oil and gas companies could reduce the exposure of their (sunk) investments to future changes. The theory, applied to this setting, is that

²⁵ <https://www.jdsupra.com/legalnews/oklahoma-oil-and-gas-business-braces-47615/>

policy uncertainty will cause oil and gas companies to increase their short-run efforts to capture oil and gas from the *McGirt* affected areas. They will increase the pace in an attempt to extract oil and gas before uncertain changes take place.

We test this logic here using two measures of production activity: the number of oil and gas wells drilled and the time between drilling and well completion. If the *McGirt* ruling caused accelerated investment, there will be increased drilling in eastern Oklahoma and wells will be completed more quickly. We would not expect to observe this racing behavior in long-term investments in renewable energy, which do not tap a finite resource. Yet, renewable energy project developers may still have an incentive to complete permitting and environmental review before a potential regulatory change.

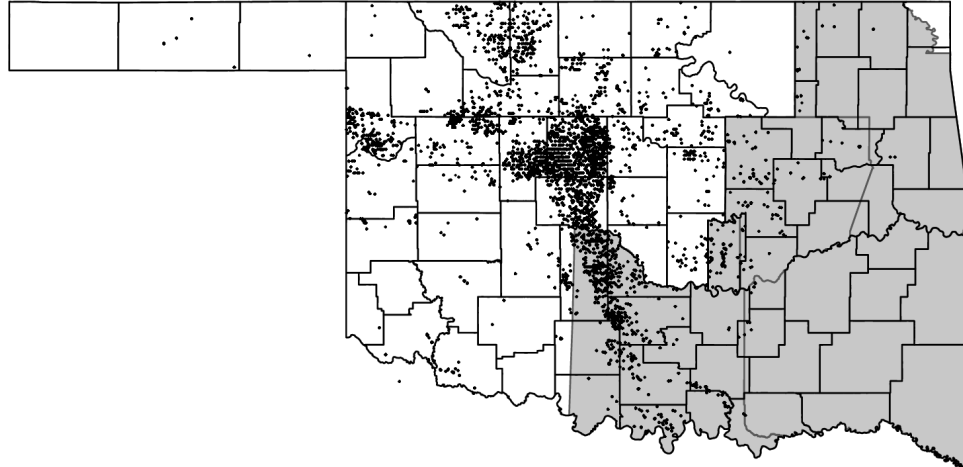
A. Number of Oil and Gas Wells

We employ data on the universe of completed oil and gas wells in Oklahoma as compiled by the Oklahoma Corporation Commission, Division of Oil and Gas Conservation in April 2022.²⁶ The data indicate the spud date, completion date, and geocoordinates of completed oil wells in addition to information about well type (oil, gas, or dry), well status (active or inactive), production capacity in terms of barrels or gas production per day, operator company/driller, and total well depth and direction (e.g., horizontal, directional, or straight). The data cover 8,726 wells completed since January 1, 2015, depicted in Figure 7. Only 612 wells have been spudded and completed since the July 2020 *McGirt* decision.

Figure 8 graphs the number of wells spudded in *McGirt* and non-*McGirt* counties. Panels A and B shows the number of wells spudded from Jan 1, 2019 through June 2020, and from July 2020 through December 2021. While the number of wells declined across the entire state, the decrease was more dramatic in non-*McGirt* counties when compared to *McGirt* counties. Panels C and D plot the (logged) number of wells over a longer period – since 2015. Here the data are binned into 14 six-month intervals spanning January to June, and July to December. As with the bar graphs, the line graphs also give no visual indication that the *McGirt* ruling decreased drilling in *McGirt* counties relative to non-*McGirt* counties.

²⁶ <https://oklahoma.gov/occ/divisions/oil-gas/oil-gas-data.html>. Specifically, we use the well completion master list, last updated in April 2022.

Figure 7
Oil Wells Spudded in Oklahoma since 2015

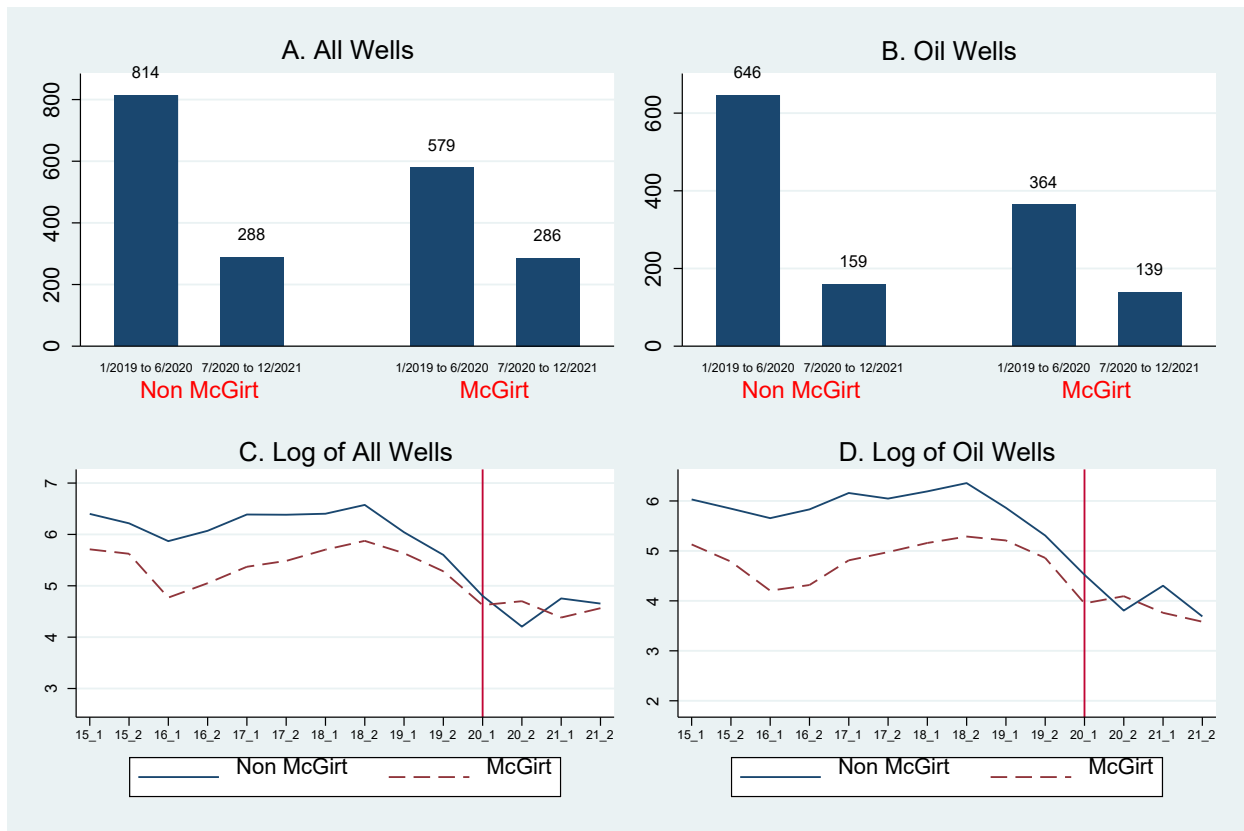


Note: The gray shaded areas depict the newly recognized Indian reservations due to *McGirt vs. Oklahoma*. The dots indicate oil wells spudded from 2015-2021. The source is the Division of Oil and Gas Conservation of the Oklahoma Corporation Commission, Well Completion List at <https://oklahoma.gov/occ/divisions/oil-gas/oil-gas-data.html>, last downloaded in April 2022.

Table 3 complements the visual evidence in Figure 8 with county-level regression estimates of the count of newly drilled wells. The data on the number of wells are aggregated into county-halfyear observations for the 76 counties and 14 half-year periods.²⁷ We decompose the “treatment effect” into three interactions terms. The variable “McGirt 1st 6months” is an indicator that equals one for McGirt counties in the first 6-month period after the ruling (i.e., July 2020 to December 2020). Similarly, “McGirt 2nd 6months” and “McGirt 3rd 6months” are interactions with county status and the January 2021-June 2021 and July 2021-December 2021 time periods. We decompose the treatment in this way to see if the response varies over time, perhaps as uncertainty about regulation and taxing abates.

²⁷ There are 77 counties in Oklahoma. We drop Osage County from the analysis because data on drilling are not available on Oklahoma’s oil and gas commission’s website.

Figure 8
Wells Drilled in Eastern vs. Western Oklahoma Before and After McGirt



Notes: Panel A sums all wells (e.g., dry, oil, and gas) spudded between Jan 1, 2019 and Dec. 31, 2021 for McGirt (Eastern) counties and non-McGirt (Western) counties. Panel B makes the calculation for only oil wells. Panels C and D do the same but for half-year periods starting with Jan. 1, 2015 and ending with Dec. 31, 2021. The source for the well data is <https://oklahoma.gov/occ/divisions/oil-gas/oil-gas-data.html>, downloaded in April 2022.

The specifications in Table 3 represent our preliminary attempts to identify the causal effect of the *McGirt* ruling on the number of oil wells drilled. First, all estimates control for half-year time-period fixed effects and county fixed effects to account for spatial and temporal differences that affect oil drilling across the state (e.g., changes in oil prices and time invariant differences in oil endowments across counties). Specifications in the even columns allow the McGirt counties to trend differently than non-McGirt counties since 2015, albeit in a linear way, to account for the possibility that the two county types continued along different trajectories after McGirt for reasons unrelated to the ruling. In an attempt to better control for differences in oil deposits and terrain that are not absorbed by the county fixed effects, we also estimate the model for a border county

sample. Columns 7-8 limit the sample to 18 McGirt and non-McGirt counties that are adjacent to each other.

Table 3
County Level Estimates of the Count of Newly Drilled Oil Wells

	Y = # of Wells		Y = ln(# of Wells)		Y = IHS(# of Wells)			(8)
	(1)	(2)	(3)	(5)	(5)	(6)	(7)	
McGirt 1 st 6months	7.06** (3.19)	4.66 (3.77)	0.59* (0.35)	0.49 (0.43)	0.79*** (0.20)	0.55*** (0.20)	0.26 (0.39)	-0.08 (0.48)
McGirt 2 nd 6months	5.83** (2.91)	3.03 (3.62)	0.23 (0.34)	0.11 (0.45)	0.60*** (0.19)	0.32* (0.19)	-0.19 (0.34)	-0.58 (0.46)
McGirt 3 rd 6months	6.60* (3.40)	3.41 (4.26)	0.64* (0.36)	0.50 (0.49)	0.66*** (0.20)	0.34 (0.23)	0.36 (0.48)	-0.10 (0.64)
Time FE	x	x	x	x	x	x	x	x
County FE	x	x	x	x	x	x	x	x
McGirt Cty Trend		x		x		x		x
Border Cty Sample							x	x
Observations	1064	1064	501	501	1064	1064	252	252
6-month time periods	14	14	14	14	14	14	14	14
Counties	76	76	76	76	76	76	18	18
R-squared	0.09	0.10	0.35	0.35	0.25	0.25	0.31	0.32

Notes: Standard errors, clustered by county, are in parentheses, * p<0.1, ** p<0.05, *** p<0.01. The dependent variable is the number of oil wells spudded, which is transformed by the natural log in Columns 3-4 and the inverse hyperbolic sine function in Columns 5-8. Columns 7-8 restrict the sample to counties on the border of McGirt and non-McGirt status. The sample is limited to wells producing oil that were spudded after December 31, 2014. The data are divided into 14 6-month time periods ending in December 31, 2021. There are 77 counties in Oklahoma; Osage county is not included in these estimates.

Table 3 suggests the *McGirt* ruling may have accelerated drilling in McGirt counties relative to non-McGirt counties. The results in Column 6, which transform the data by the inverse hyperbolic sine function, indicate the McGirt ruling may have increased the number of oil wells by 73% in the first 6 months and 38% in the second 6 months.²⁸ We find no evidence of a positive effect in the border county comparison, however. This is arguably a more credible assessment of the possible effects of McGirt because, presumably, neighboring counties share common geological endowments and have similar infrastructure for moving inputs and outputs.²⁹

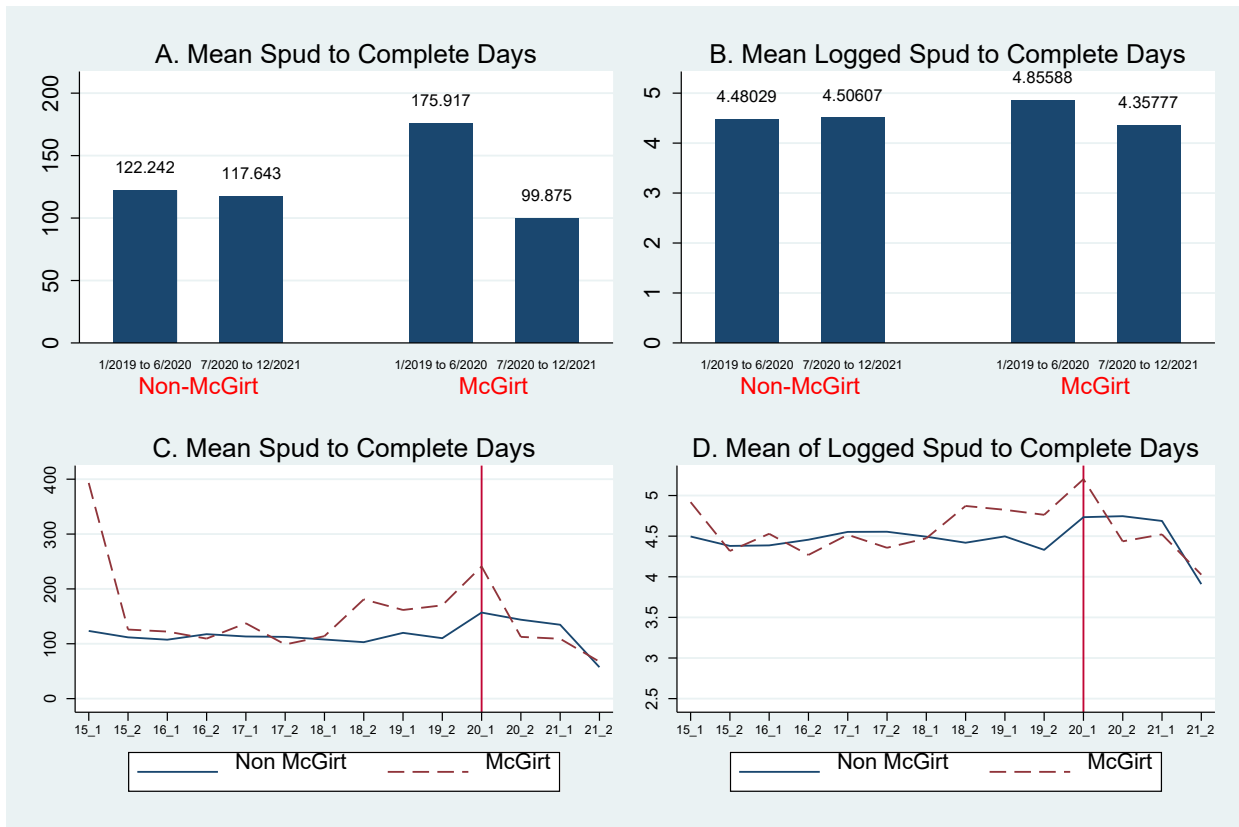
²⁸ The calculations come from the percentage interpretation of $e^\beta - 1$ where β is the estimated coefficient of interest. The inverse hyperbolic sine function is similar to a logarithmic transformation, but it is defined at zero. The coefficients can generally be interpreted in the same way as logged coefficients when the sample contains few zeroes. Ours is a borderline case with about 50% of the observations at zero (Bellemare and Wichman 2020).

²⁹ In the border sample, however, the assumption that the non-reservation counties were unaffected by the ruling is perhaps less credible because operators planning to drill in eastern Oklahoma could instead choose to drill in a neighboring non-reservation county (assuming leasing arrangements are available).

B. Timing of Well Drilling and Completion

Figure 9 graphs the mean time from drilling to completion of an oil well.³⁰ Panel A shows the mean for the 1,305 oil wells drilled during the 18-month periods before and after McGirt. The average drilling time decreased substantially in the McGirt areas relative to the non-McGirt areas after the decision. Panels C and D plot the mean completion and log completion times over 6-month intervals beginning in January 2015. These plots support the visual evidence in Panels A and B, namely that after vs. before differences in completion times decreased more in McGirt areas when compared non-McGirt areas.

Figure 9
Time from Drilling to Completion of Oil Wells



Notes: Panel A shows the mean number of days from well spudding to well completion between Jan 1, 2019 and Dec. 31, 2021 for McGirt (Eastern) counties and non-McGirt (Western) counties. Panel B shows the mean of the logged number of days. Panels C and D show the means over half-year periods starting with Jan. 1, 2015 and ending with Dec. 31, 2021. The source for the well data is <https://oklahoma.gov/occ/divisions/oil-gas/oil-gas-data.html>.

³⁰ We focus on oil wells because there far fewer gas wells in the sample.

Table 4 tests for the effects of McGirt on the number of drilling days illustrated in Figure 9. The data are at the oil well-level and span Jan. 1, 2015 through Dec. 31, 2021. The even columns allow McGirt counties to have a different linear time trend than non-McGirt counties. Columns 3-4 add fixed effects for drill type (e.g., directional, horizontal, straight, and service hole). Columns 5-6 add fixed effects for each of 517 different operators who spudded wells during the sample period. Columns 7-8 add fixed effects for each of the 513 geological formations penetrated by wells during the sample period.

Table 4
Estimates of Logged Days Elapsed from Oil Well Spudding to Completion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
McGirt 1 st 6m	-0.45*** (0.14)	-0.61*** (0.15)	-0.51*** (0.14)	-0.66*** (0.15)	-0.29** (0.13)	-0.45*** (0.14)	-0.42*** (0.16)	-0.57*** (0.17)
McGirt 2 nd 6m	-0.14 (0.13)	-0.32** (0.14)	-0.21* (0.12)	-0.38*** (0.14)	-0.05 (0.13)	-0.24* (0.14)	-0.16 (0.15)	-0.34** (0.16)
McGirt 3 rd 6m	0.06 (0.15)	-0.15 (0.17)	-0.02 (0.16)	-0.22 (0.17)	-0.03 (0.18)	-0.25 (0.19)	-0.02 (0.15)	-0.24 (0.17)
County FE	x	x	x	x	x	x	x	x
Time FE	x	x	x	x	x	x	x	x
McGirt Cty Trend		x		x		x		x
Drill Type FE			x	x				
Operator FE					x	x		
Formation FE							x	x
Observations	5652	5652	5652	5652	5652	5652	5652	5652
R-squared	0.207	0.209	0.220	0.221	0.464	0.466	0.366	0.367

Notes: Standard errors, clustered by county, are parentheses, * p<0.1, ** p<0.05, *** p<0.01. The dependent variable is the natural log of the number of days between when an oil well is first spudded and when it is completed. The even columns include linear time trends that are unique to McGirt counties. Columns 3-4 add fixed effects for drill type (e.g., directional, horizontal, straight, and service hole). Columns 5-6 add fixed effects for each of 517 different operators who spudded wells during the sample period. Columns 7-8 add fixed effects for each of the 513 geological formations penetrated by wells during the sample period. The results look very similar if we control for a well's longitude and latitude. The sample is limited to wells producing oil that were spudded after December 31, 2014. The models include a time fixed effect for each into 14 6-month time periods beginning in December 31, 2014 and ending in December 31, 2021.

Across all columns there is evidence that drilling sped up in McGirt areas relative to non-McGirt areas, especially during the first six months after the court decision. The dependent

variable is logged implying the McGirt ruling decreased drilling time by 25% to 48%.³¹ Given that the average spud-to-completion time was 128 days, this represents a decrease of 37 to 84 days. The negative coefficients on McGirt 2nd 6m also imply the McGirt ruling decreased drilling times over January 2021 through June 2021 by 5% to 32%, although the coefficients are statistically insignificant in 5 of 8 specifications. The coefficients on McGirt 3rd 6m are insignificant, suggesting the effect was no longer present by July 2021 through December 2021.

The results in Table 4 are similar if we also control for the size of the oil well. This finding suggests that, even for a given well size, the McGirt ruling may have triggered a race to extract oil from land within the McGirt counties. The statistically insignificant coefficients on McGirt 3rd 6m, however, suggests the race was short-lived.

C. Renewable Energy Projects

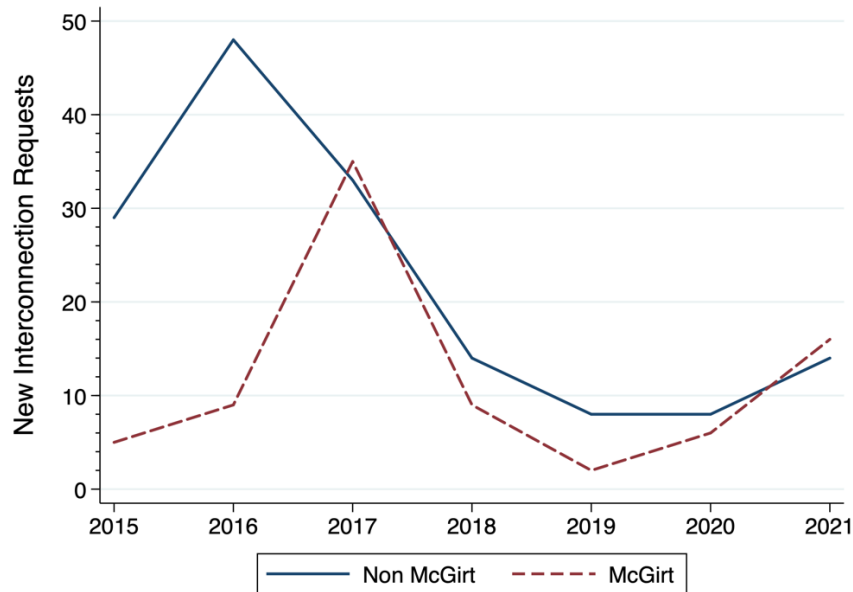
In complementary empirical analysis, we use interconnection queue data to measure investment in renewable energy. The interconnection queue is the process electricity generators use to connect to the grid. This process is a necessary step before a generator begins operation, and it usually takes a few years to complete. Our data are from the Southwest Power Pool, a grid operator for several central U.S. states, including the entire state of Oklahoma. We observe the year the interconnection request was made, the county or nearest city to the proposed generator, and the capacity and fuel type for the proposed generator. We focus on wind, solar, and battery projects, which make up 90 percent of interconnection requests from 2015-2021.

The interconnection queue data measure firms' intentions to build projects, but not all projects that appear in these data will be completed. The firms building renewable energy projects are for-profit companies, and they make an interconnection request early in the process of building a project. Making a request is not costless: firms must show they have lease agreements for the land necessary to build the project ("site control") and provide a (refundable) deposit (SPP 2021). Yet roughly two-thirds of generators that enter the process withdraw from it. Firms may withdraw projects if the cost of connecting to the grid is unexpectedly high or they are unable to secure a long-term contract to sell the project's power.

³¹ The calculations come from the percentage interpretation of $e^\beta - 1$ where β is the estimated coefficient of interest (Halvorsen and Palmquist 1980).

As shown in Figure 10, we do not find evidence that the McGirt decision had an adverse impact on renewable energy investment. There are relatively few interconnection requests in the years surrounding the McGirt decision, so this analysis is only suggestive. Yet, the difference in the number of new interconnection requests in McGirt counties vs. non-McGirt counties was, if anything, smaller in 2021 than in previous years.

Figure 10
Renewable Energy Project Requests for Grid Connection



Notes: New interconnection requests by wind and solar generators, as well as batteries. McGirt are projects in counties directly affected by the McGirt decision; non-McGirt are projects in counties that were not.

6. Discussion and Conclusions

Although much of the commentary around the McGirt ruling suggested it would inflict economic chaos and stunt investment in eastern Oklahoma, we fail to find evidence that it did so. Media forecasts suggesting that investment would slow do not match data on home sales and oil, gas, and renewable energy investment through year-end 2021. We find no evidence that home sales prices decreased in eastern Oklahoma. And, if anything, the evidence suggests the ruling increased the pace of oil drilling in eastern Oklahoma following the court’s decision rather than stunting activity.

Why did we fail to find evidence of large effects of the *McGirt* ruling given the economic literature’s emphasis on how policy uncertainty and risk will delay or stunt investment? What factors might mitigate these effects, or militate against the hypothesis, in the context of residential

home markets? There are several possibilities. First, homeowners and would-be buyers might be unable to move in the short-run. Second, participants in real estate markets may feel that that tribes have credibly conveyed that policies will not change in a way that is unfavorable to their interests in the long run. One avenue for doing this is to signal an interest in cooperation and intergovernmental agreements with the state as tribes have done. Another avenue is for tribes to continue to demonstrate that their interests are not much different than the state's: both governmental entities want land values in their jurisdictions to be high and economies to thrive, which requires a commitment to low crime and fair and predictable decision making (see, e.g., Leeds and Beard 2021). Third, participants in real estate markets may be confident that, in the long run, courts or Congress will revert jurisdictional authority back to what it was in the years preceding *McGirt*.

The finding that oil companies appear to be accelerating drilling activity in eastern Oklahoma does not, however, indicate that energy investors think the situation will necessarily revert in coming years. Their apparent racing behavior is consistent with an attempt to capture oil before new taxes or regulations might make doing so less profitable. If this is the correct interpretation, then any policy commitment towards a stable tax rate – regardless of how it is distributed between tribal governments and the state – could help work against this distortion. Oil companies and leasees are likely to care about the bottom line – e.g., is the rate 8% or higher – rather than who receives the revenue. Similarly, energy companies might worry more about uncertainty related to overlapping regulatory jurisdiction rather than uncertainty about how tribal regulations will be different than state regulations. If this is true, the racing will abate when jurisdictional authority becomes clearer because investors simply need time to adjust to a changed policy. The policy implication is that courts and Congress could do more damage by keeping open the door for future shifts in jurisdiction.

The analysis here also raises questions about the important insight of Baker et al. (2016), that media coverage can productively measure uncertainty. Is this still true for cases in which one entity, such as the state of Oklahoma, has incentives to exaggerate uncertainty and others, such as American Indian Tribes, have incentives to downplay it? Put differently, are media reports a useful gauge when perceptions of uncertainty affect not only the size of economic investment, but also the distribution of returns from investments across different political entities? We leave these important questions for future research.

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