

PARTISAN PREFERENCES REGARDING DISCLOSURE MECHANISMS IN HYDRAULIC FRACTURING LEGISLATION

Table of Contents

INTRODUCTION	1
BACKGROUND	8
The Use of Disclosure Mechanisms	8
Expected Actions of Different Governments	23
Evolution of Party Preferences Over Environmental Issues	27
Ideological Differences Between Parties	35
METHODS	38
ANALYSIS OF CASES	45
Hydraulic Fracturing Legislation in 2012	46
Indiana HB 1107	47
Louisiana HB 957	50
Pennsylvania HB 1950.....	52
Hydraulic Fracturing Legislation in 2013	55
Arkansas HB 2001	59
Illinois SB 1715 and 2155	62
Rhode Island SB 725.....	68
DISCUSSION OF EXOGENOUS FACTORS' IMPACT ON LEGISLATION	70
2012 Legislation	70
Indiana HB 1107	70
Louisiana HB 957	74
Pennsylvania HB 1950.....	76
Legislative Trends In 2012	79
2013 Legislation	81
Arkansas HB 2001	82
Illinois SB 1715 and 2155	85
Rhode Island SB 725.....	89
Legislative Trends In 2013	91
Legislative Trends Between Years	92
A Lack of Non-Stringent Bills.....	94
CONCLUSION	95
REFERENCES	100

INTRODUCTION

Hydraulic fracturing is a process of natural gas extraction that relies on pressurized water shot into underground wells that then brings trapped natural gas to the surface¹. This method of natural gas extraction has been used in the United States throughout the 20th century². During this time period, hydraulic fracturing was limited to vertical hydraulic fracturing- a relatively less invasive method of natural gas extraction that relied on a single well drilled straight down through the water table³. The drawback of vertical hydraulic fracturing lies in its lack of versatility; it cannot reach more remote pockets of natural gas. To remedy this problem, the industry switched to horizontal hydraulic fracturing in the late 1990s⁴. This newer method relies on an initial vertical well, but it also utilizes a connected horizontal shaft that can pass through up to two miles of the water table⁵. It allows contractors to extract hard-to-reach pockets of natural gas but it also has a significantly higher risk for leakage of fracking fluid into groundwater supplies as well as ruptures along the longer well shaft.

Horizontal hydraulic fracturing is a relatively new technique and it has been the subject of much debate among industry and environmentalist interests over the past decade. There has been a robust conversation around the topic in many parts of the country but no national consensus has been reached. The implementation of new horizontal drilling techniques has revitalized the industry by giving it access to

¹ Valko, Peter, and Michael J. Economides. 2006. Hydraulic fracture mechanics. *Texas A&M University. Concurrent Resolution Urging Congress to Clearly Delegate Responsibility for Regulating Hydraulic Fracturing to the States*. SCR 12(, 2012): .

² *Ibid.* 1

³ *Ibid.* 1

⁴ *Ibid.* 1

⁵ *Ibid.* 1

previously unviable stores of natural gas. With the advent of new techniques, legislation has had to address every aspect of the newly emerged industry. Industry experts argue that hydraulic fracturing will help the US reach its energy independence goals and switch a significant portion of its energy portfolio from coal to natural gas⁶. Environmentalist groups, both private and government entities, argue that the negative impact upon surrounding water supplies is too much of a burden to validate the practice of hydraulic fracturing⁷. There are also groups that make the more subtle argument that the impact of horizontal hydraulic fracturing is not sufficiently understood and the practice merits further study, though it may be viable in the future⁸. Hydraulic fracturing industry practices have evolved extremely rapidly in recent years but legislation has not yet caught up⁹. The argument follows that there is not sufficiently specific legislation regulating hydraulic fracturing because new practices are rapidly emerging and they are not yet common enough knowledge that legislators have addressed them.

The debate around hydraulic fracturing is further complicated by the lack of cohesive national regulation on this subject. It demonstrates how states behave when there are no federal incentives or requirements on a popular, time-sensitive issue. More broadly, this issue demonstrates how state governments behave in the absence of federal control. This allows a greater range of actions because each state is free to decide for itself exactly how it would like to regulate hydraulic fracturing.

⁶ Law, B. E., and C. W. Spencer. 1993. Gas in tight reservoirs - an emerging major source of energy. *United States Geological Survey, Professional Paper* 1570.

⁷ *Ibid.* 6

⁸ *Ibid.* 6

⁹ *Ibid.* 6

Different governments' responses to hydraulic fracturing in different parts of the country may diverge from expected partisan preferences on this issue. There are myriad environmental and economic issues that may supersede predicted behavior. State-level control of this issue allows individual governments more freedom to pursue varied solutions to the issue. Thus, predictions can be made about expected actions of different partisan governments but these must be made with the understanding that variation from expected preferences is more likely than on issues where there is cohesive national regulation.

Hydraulic fracturing wells are mentioned as an exemption in the Clean Water Act but otherwise the national government has largely left this issue to the states to legislate¹⁰. Many environmental issues, such as clean air or water, are overseen by broad national acts¹¹. Under the umbrella of federal legislation, states have some freedom to pass their own regulations. These regulations vary between states but they are all bound by the terms set forth in the federal laws in terms of which issues states can address and to what extent¹². In the absence of federal regulation, all issues pertinent to hydraulic fracturing are left to the states. For example, states may make rules about emissions into the air or pollution in water but only around specific standards, such as the allowable parts per million of certain chemicals released into the air¹³. They cannot however make regulations that contradict national laws. Hydraulic fracturing does not have such restrictions. State

¹⁰ Shlyapobersky, J. 1985. The energy of hydraulic fracturing. Paper presented at The 26th U.S. Symposium on Rock Mechanics (USRMS), Rapid City, SD.

¹¹ Jennings, Randolph, and Committee on Environment and Public Works. 1979. *Legislative history of the clean air act amendments of 1977: A continuation of the clean air act amendments of 1970 : Together with a section-by-section index (1979)* . Pub. L. No. 91-604, 84 Stat. 1676.

¹² *Ibid.* 11

¹³ *Ibid.* 11

regulations may address any topic pertaining to hydraulic fracturing, including but certainly not limited to well depth or location, fracking fluid composition, distance from residences, permitting, notifications to landowners, procedures to contest well placement, etc. This freedom has resulted in state legislation that varies widely between states in terms of issues addressed and how strictly these issues are monitored.

The patchwork of state legislation has created a slew of problems for both sides of the hydraulic fracturing debate. There is no national standard to govern the placement or density of hydraulic fracturing wells, the disclosure of chemicals in fracking fluid, or negotiations for land use in hydraulic fracturing operations. All these issues have been dealt with in unique ways by each state that currently has legislation dealing with hydraulic fracturing on the books or under consideration. There is a connection between the political makeup of a state's legislature and the particular approach it has taken in regulating hydraulic fracturing.

Hydraulic fracturing legislation can be divided broadly into three categories: information disclosure mechanisms, technical regulations, and human impacts. Information disclosure legislation seeks to collect information about the hydraulic fracturing process. Some information disclosure provisions collect this data in publicly available databases managed by the state or by extra-governmental groups. Other information disclosure mechanisms may simply collect the information for the government's purposes. Disclosure legislation may be linked with other regulations that dictate what can be done with the newly available information and by whom. For example, some bills give private citizens access to information and

give them the right to sue industry for violation or use the information to stop intended actions. Information disclosure provisions are not inherently partisan. They may sometimes be linked to philosophically Democratic goals, such as making information more publicly available or increasing accountability for industry, but this is not a rigorous link that should always be assumed to be true. Information disclosure merely collects information; if this process yields information that proves the hydraulic fracturing process does not pollute or is in other ways not harmful to the environment then information disclosure may well serve to increase support for hydraulic fracturing. Partisan preferences over disclosure mechanisms are more closely linked to what is done with the information once it is collected, not the act itself of collecting information.

Technical regulations address scientific questions endemic to the process of hydraulic fracturing. Different states may pass bills that dictate a well's location, its depth, how long it may be in operation for, what chemicals may be used in fracking fluid and in what concentrations, etc. These regulations are not inherently linked to any preferences over the hydraulic fracturing process nor can they be attributed clearly to one party over another.

Legislation regarding hydraulic fracturing may also be focused at addressing the impact upon existing communities caused by hydraulic fracturing. This can be accomplished through legislative provisions such as the necessity of giving notice to surface land owners before drilling or setting up a process for property owners to respond to proposed locations. There can also be some overlap with other types of hydraulic fracturing legislation. For example, well location may be considered both

technical and human impact, or how long a well may operate, or what is contained within fracking fluid. Human impact provisions may also overlap with disclosure mechanisms. The steps beyond collecting information may be aimed at allowing private citizens to advocate for themselves in the face of proposed or existing hydraulic fracturing legislation. This type of legislation is the most clearly aligned with a specific goal in response to hydraulic fracturing: it minimizes impact on people. This is usually linked to halting or reducing hydraulic fracturing operations. As discussed, this is predicted to be a preference more for Democrats than Republicans.

This study will examine the legislation passed by different partisan governments related to hydraulic fracturing that deals specifically with disclosure mechanisms in hydraulic fracturing. This has become a particularly contentious point in the debate over the future of hydraulic fracturing more broadly in the country. Legislators disagree over what information should be disclosed and what should be done with this information afterward. Disclosure is largely aimed at gathering information about the technical factors that government may or may not regulate through a different type of legislation and then disclosing this information to the public in some way.

This study will investigate different states' approaches to governing hydraulic fracturing. It will take a robust sample of enacted legislation from Democrat and Republican-controlled governments as well as mixed-control governments and evaluate what disclosure mechanisms it includes to regulate hydraulic fracturing. It will discuss briefly different types of legislation relating to

hydraulic fracturing but the primary focus of the study will be on legislation that deals with mandatory disclosure mechanisms in hydraulic fracturing legislation. Disclosure was chosen to analyze because it has recently come to the fore of the debate over hydraulic fracturing. This new avenue for regulating hydraulic fracturing is nuanced; it deals with how to disclose information and to whom, what information should be shared, and what should be done with the information once it has been obtained. There are also numerous bills that deal with disclosure provisions from recent years that offer a sufficiently large sample to analyze across cases and draw conclusions about observed patterns, specifically regarding partisan preferences.

The study will seek to test the following propositions. If Democrats are more likely to support environmental issues than are Republicans and disclosure mechanisms in environmental legislation benefit the environment then it follows that Democrat-led governments are more likely to pass bills that include disclosure mechanisms in environmental legislation than are Republican-led governments. Furthermore, if horizontal hydraulic fracturing is detrimental to the environment then it follows that Democratic governments are more likely to pass legislation with disclosure mechanisms pertaining to hydraulic fracturing than are Republican governments in order to mitigate the harm inherent to horizontal hydraulic fracturing. Finally, if states that are controlled in both houses and the governor's seat by one party pass more legislation overall and states controlled in both houses and the governor's seat by Democrats pass legislation pertaining to hydraulic fracturing that includes disclosure mechanisms more frequently than any other

states then it follows that states controlled entirely by Democrats will pass more legislation pertaining to hydraulic fracturing that includes disclosure mechanisms than states controlled by a mixture of Democrats and Republicans.

BACKGROUND

THE USE OF DISCLOSURE MECHANISMS

Politicians frequently disagree over what should be included in environmental legislation. The most controversial part of this dispute lies in the uncertainty over how much power such legislation should have. Politicians at all levels of government disagree about how much power legislative acts should have to regulate industry or compel certain actions from private entities¹⁴. Democrats and Republicans increasingly fall on opposite sides of this debate with each party moving toward extreme positions¹⁵. One of the most common attempts to allow legislation to oversee private actors is the inclusion of disclosure mechanisms, specifically disclosure mandates for private entities that are intended to prevent environmental harms¹⁶. These mechanisms are particularly controversial because they allow government to dictate the actions of the market and because they seek to do so to accomplish a goal- to protect the environment- that many legislators do not stand behind¹⁷. It follows that Democrats and Republicans may disagree on the use of disclosure mechanisms.

¹⁴ Pew Research Center. 2013. Views of government: Key data points. *Pew Research*.

¹⁵ Carson, Jaime, Gregory Koger, Matthew J. Lebo, and Everett Young. 2010. The electoral consequences of party loyalty in congress. *American Journal of Political Science* 54 : 598,598-616.

¹⁶ Buhr, Nola. 1998. Environmental performance, legislation and annual report disclosure: The case of acid rain and Falconbridge. *Accounting, Auditing & Accountability Journal* 11 (2): 163.

¹⁷ *Ibid.* 16

Disclosure mechanisms have been a standard tool in corporate negotiations between managers and shareholders for some time. Most large companies maintain certain transparency requirements that mandate regular reports to stockholders¹⁸. The necessity of corporate disclosure to investors has become an accepted practice in the private sector. At the same time, disclosure mechanisms in hydraulic fracturing legislation are the subject of close scrutiny¹⁹. Many legislators argue that disclosure mechanisms represent an untoward intervention of government authority²⁰. The inclusion of disclosure mechanisms has accordingly been contested in environmental legislation.

Disclosure mechanisms for industry and politics share some similarities in the methods that they use to compel transparency from different actors. Disclosure mechanisms are defined simply as any tool that results in information being made available to the public, in both the public and private sectors. The particular methods used to compel this information to be made public vary widely. In environmental legislation, disclosure mechanisms often take the form of mandatory reporting; the government sets parameters for information that industry must share with it²¹. Then, depending on the disclosure provision in question this information may be logged in a private government database or incorporated in an existing

¹⁸ Silva da Rosa, Fabricia; Rolim Ensslin, Sandra; Ensslin, Leonardo; and Joao Lunkes, Rogério. 2012. Environmental disclosure management: A constructivist case. *Management Decision* 50 (6): 1117-36.

¹⁹ Fritzemeyer, J. R., & Carmichael, D. R. (1972). Environmental disclosures. *Journal of Accountancy (Pre-1986)*, 133(000003), 76. Retrieved from <http://search.proquest.com.proxy.lib.umich.edu/docview/198260804?accountid=14667>

²⁰ Wegener, Matt, Elayan Fayez A., Sandra Felton, and Jingyu and Li. 2013. Factors influencing corporate environmental disclosures. *Accounting Perspectives* 12 (1).

²¹ *Ibid.* 19

database of some sort²². Disclosed information may also be made public²³. This is not always the case with disclosure mechanisms in hydraulic fracturing legislation. There is expected variation in what is done with information after it is disclosed to the government and also what effect information may have if it is made public. Disclosure on its face seems to be a tool that could be used to bring to light harmful industry practices that have a negative environmental impact²⁴. However it may be the case that the information disclosed demonstrates that industry practices are in fact benign, in which case it may increase support for industry²⁵. Information disclosure does not have an inherent mission with regard to halting or encouraging industry practices; this intent must be interpreted later based upon what the information reveals and whether this information is later made public.

In both the public and private sectors, mandatory disclosure is written into governing text, whether corporate guidelines or legislation. This mandatory disclosure seeks to change corporations' reporting actions to a point of greater transparency to either private industry or the government. This can be done either through independent registries that compile data from all reporting parties or through industry-set standards that all actors must comply with.

Disclosure has become a popular mechanism to ensure compliance in different political spheres. It is often implemented as a policy tool with the assumption that citizens have an incentive to act upon perceived harms that are

²² *Ibid.* 19

²³ *Ibid.* 19

²⁴ *Ibid.* 19

²⁵ *Ibid.* 19

revealed through disclosure while industry does not have this same incentive²⁶. This is made with the additional assumption that the information is made public after it is disclosed to the government²⁷. Thus, it can be interpreted as a system of government regulation intended to compel private industry change through private citizen action. However, corporate actors may also have an incentive to act upon newly discovered harms of their own accord, rather than relying on citizens' coercion²⁸. This may improve the public perception of the corporate actor and mitigate fallout from the disclosure of damaging information. If this is the case, it is not accurate to describe disclosure mechanisms as an attempt to influence private industry action because industry is voluntarily participating.

Economic regulation provides robust examples of government-mandated disclosure mechanisms that have influenced industry behavior and public perception²⁹. Disclosure mechanisms can compel additional information from various private sectors and enhance effective governance by improving public perceptions of leaders.³⁰ The newly available information improves the public's trust in the particular industry and thus can benefit both government and industry³¹. This is not to say that disclosure uniformly benefits government or industry. If the mandatory disclosure reveals negative information it can harm

²⁶ Kraft, Michael, Mark Stephan, and Troy Abel. 2011. *Coming clean: Information disclosure and environmental performance (American and comparative environmental policy)* The MIT Press.

²⁷ *Ibid.* 26

²⁸ *Ibid.* 26

²⁹ Pacific Media and Communications Facility. 2006. *Information disclosure policy: A toolkit for pacific governments.*

³⁰ *Ibid.* 29

³¹ *Ibid.* 29

public perception. However, increased transparency may mitigate harm over time³². Furthermore, once disclosure mechanisms are in place they improve perception of the industry over time³³.

In recent years, information disclosure has been examined as a policy strategy specifically for environmental protection³⁴. This new approach has moved away from the previous command-and-control regulatory scheme in favor of a bolder approach that does not allow government and industry to focus on meeting only minimal standards³⁵. Command and control was the accepted practice for many years. This regulatory scheme was centered on the government handing down regulations and then policing industry actors' compliance³⁶. Since the 1970s this has been considered the most effective method of regulation to prevent environmental degradation³⁷. However, command and control relied on a growing number of regulations over time to ensure compliance from industry³⁸. This increasingly complex regulation became politically disadvantageous over time, particularly among Republicans³⁹. Thus, environmental regulation has sought new methods of monitoring industry actions and safeguarding environmental protections.

The Toxic Release Inventory (TRI) represents a new direction for environmental regulation. The TRI is a publicly available registry that companies

³² *Ibid.* 29

³³ *Ibid.* 29

³⁴ *Ibid.* 26

³⁵ *Ibid.* 26

³⁶ *Ibid.* 26

³⁷ Harrington, Winston, and Richard Morgenstern. 2004. Economic incentives versus command and control: What's the best approach for solving environmental problems? . *Resources for the Future* Fall/Winter.

³⁸ *Ibid.* 37

³⁹ *Ibid.* 37

must use to record their emissions of various substances⁴⁰. This tool demonstrates that information disclosure can have a large impact on the environmental performance of a particular industry⁴¹. Highly polluting industries had a largely negative response to the TRI whereas less polluting industries took a more measured approach⁴². This can likely be attributed to the relative amounts of work that different industries would have to do to comply with regulations and public expectations after their actions are made clear through disclosure in the TRI. Though the TRI shows some variability in the performance of individual locations, it demonstrates a clear overall pattern of reduced pollution that can be attributed to the TRI method of mandatory information disclosure⁴³. This method of reporting and recording emissions has transformed environmental protection from a scenario where government and industry strive only to meet minimum requirements to one where it is advantageous to be a leader in ecofriendly behavior.

The variability that is endemic to TRI reporting is not an indictment of information disclosure in environmental legislation⁴⁴. Instead it suggests that the most successful strategy to compel environmentally friendly behavior will use a combination of traditional command-and-control and information disclosure techniques⁴⁵. Disclosure can be successful on its own but a combination of techniques leads to the best outcome for environmental protection. This will allow

⁴⁰ *Ibid.* 26

⁴¹ *Ibid.* 26

⁴² *Ibid.* 26

⁴³ *Ibid.* 26

⁴⁴ *Ibid.* 26

⁴⁵ *Ibid.* 26

different types of organizations to combine methods of pollution reduction for a minimum impact on business with a maximum benefit to the environment.

The TRI is a tool that can be used by legislators who seek to learn more information about industry practices, in this case hydraulic fracturing⁴⁶. Support and opposition to the TRI do not fall cleanly along partisan lines. Some legislators praise the system as a step forward in documenting environmental damages in an organized manner⁴⁷. Others oppose the system because they do not believe that there should be reporting requirements placed upon industry actors⁴⁸. A different branch of opposition suggests that the TRI is an ineffective disclosure mechanism because companies report their own emissions and they are allowed to approximate the information rather than having to document it⁴⁹. The TRI has not been universally well received, with people offering suggestions to either increase or reduce its impact upon industry. This system does indisputably represent a move away from traditional command and control legislation toward a new realm of disclosure provisions for environmental regulation.

In order for disclosure to be a useful tool, there must exist a publicly accessible location for information storage.⁵⁰ FracFocus is one publicly available

⁴⁶ Belliveau, Mike. 2010. *Healthy states: Protecting families from toxic chemicals while congress lags behind*.

⁴⁷ *Ibid.* 46

⁴⁸ *Ibid.* 46

⁴⁹ *Ibid.* 46

⁵⁰ Kraft, Michael. 2014. Using information disclosure to achieve policy goals: How experience with the toxics release inventory can inform action on natural gas fracturing. *CLOSUP Issues in Energy and Environmental Policy* 6.

database where industry actors can voluntarily report information⁵¹. This database has become representative of information disclosure and many states rely on it as a baseline for disclosure legislation⁵². There is no mandatory compulsion to report information to FracFocus, which has been criticized because it severely limits the information available to the public⁵³. There have also been complaints about the accessibility and comprehensibility of FracFocus; some groups make the case that the database serves little to no use because people do not know how to access information they need⁵⁴. Some states have sought an alternative solution by creating their own databases, managed by the state government⁵⁵. This method allows for more control over the setup of the database and the rules for reporting information in it⁵⁶. Individual state-managed databases can face opposition because they create more work in oversight, enforcement, and upkeep for the government. Mandatory reporting can also be politically contentious. Currently, FracFocus remains the only nationally recognized database for disclosure of hydraulic fracturing information⁵⁷.

It is no coincidence, then, that highly polluting industries stand to lose the most from the implementation of disclosure mechanisms in environmental legislation. By its nature, the inclusion of mandatory disclosure increases transparency in a given industry⁵⁸. When more light is shed on an industry, public

⁵¹ Konschnik, Kate, Margaret Holden, and Alexa Shasteen. 2013. Legal fractures in chemical disclosure laws: Why the voluntary chemical disclosure registry FracFocus fails as a regulatory compliance tool. *Harvard Law School Environmental Law Program Policy Initiative*.

⁵² *Ibid.* 51

⁵³ *Ibid.* 51

⁵⁴ *Ibid.* 51

⁵⁵ *Ibid.* 51

⁵⁶ *Ibid.* 51

⁵⁷ *Ibid.* 51

⁵⁸ *Ibid.* 20

outcry often demands that action be taken to change industry practices and reduce harm to the environment⁵⁹. This in turn places a burden upon industry and requires a change in their established practices, which is at best inconvenient and at worst quite costly⁶⁰. It can be inferred from this pattern that public disclosure leads to more environmental protections, if only in deference to public opinion.

Industry actors have largely exhibited opposition to environmental regulation⁶¹. Their primary interest lies in continuing business practices in the most profitable manner and this is often incompatible with the restriction inherent to environmental regulation⁶². However, there has been some support from industry actors for the TRI or similar voluntary reporting disclosure mechanisms⁶³. This can be seen through their compliance in self-reporting to the TRI database⁶⁴. Voluntary disclosure itself has less of an impact on industry action than command and control regulations, which likely explains the support that some industry actors have shown for the TRI⁶⁵. There is certainly variation among companies of different sizes, from different industries, with different outlooks on the environment, etc. but the stated preferences generally hold true for most corporate interests⁶⁶.

Pushback against environmental legislation and variability in reduction of environmental harms through different regulatory schemes has been especially

⁵⁹ *Ibid.* 19

⁶⁰ *Ibid.* 19

⁶¹ *Ibid.* 19

⁶² *Ibid.* 19

⁶³ *Ibid.* 26

⁶⁴ *Ibid.* 26

⁶⁵ *Ibid.* 26

⁶⁶ *Ibid.* 46

problematic within industries that are more prone to pollution⁶⁷. Generally, self-reporting and support for mandatory disclosure are highest among industries that have low incidence of pollution⁶⁸. This is certainly beneficial in increasing overall publicity and support for the proposed measures but it has markedly less impact in measurably reducing pollution. Naturally, industries that are likely to support disclosure mechanisms are also those that least need them⁶⁹. Part of the opposition to disclosure mechanisms lies not in opposition to the actions that they mandate but rather a fear of what mandated actions might be forced upon them afterward⁷⁰. Companies in highly polluting industries are loath to open the door to government oversight because this may lead to more government mandates. These mandates are often costly and difficult to comply with, so industries that pollute the most have a natural incentive to disclose, out of fear that the government may later force even stricter, more costly regulations⁷¹. This fear must be weighed against the higher disincentive that polluting industries have against disclosure for fear of immediate public or governmental backlash in response to the information they release.

Disclosure is a useful policy tool when discussing hydraulic fracturing because it helps to alleviate some of the public and expert uncertainty about the scientific practices involved⁷². It can reveal information regarding well depth and location, duration of hydraulic fracturing operations, chemicals in fracking fluid,

⁶⁷ *Ibid.* 20

⁶⁸ *Ibid.* 20

⁶⁹ *Ibid.* 20

⁷⁰ *Ibid.* 18

⁷¹ *Ibid.* 18

⁷² Gosman, Sara. 2013. Reflecting risk: Chemical disclosure and hydraulic fracturing. *Public Law and Legal Theory Research Paper Series* paper no 324.

etc.⁷³. Disclosure is lauded as a cost effective tool that increases public knowledge and safety while also empowering individuals and legislators to make the best possible decisions for themselves or their constituents respectively⁷⁴. Disclosure is also beneficial because it improves the lawmaking process by putting individuals who now have a “right to know” on more equal footing with industry representatives and thus improving the information that legislators receive from all sides of this debate⁷⁵. This method cannot itself compel action toward environmental protection⁷⁶. Disclosure merely gathers information; it must be paired with other legislative provisions that either make the information public or give individuals or extra-governmental groups the right to seek out the information and act on it to change industry action⁷⁷.

However, disclosure can be problematic if there is an unacceptable level of industry knowledge to satisfy demands for information⁷⁸. If the requisite knowledge cannot be obtained, the amount of information generated through disclosure may not respond well to long-term uncertainty about the health and environmental effects of the activity⁷⁹. Information disclosure can be difficult with any issue, but especially with environmental issues, where technology and industry practices are rapidly changing- such as hydraulic fracturing. Thus, a bill with disclosure mechanisms may not substantially increase citizens’ knowledge about hydraulic fracturing activities or have a positive effect on their physical or community

⁷³ *Ibid.* 72

⁷⁴ *Ibid.* 72

⁷⁵ *Ibid.* 72

⁷⁶ *Ibid.* 72

⁷⁷ *Ibid.* 72

⁷⁸ *Ibid.* 72

⁷⁹ *Ibid.* 72

health⁸⁰. The consideration of available information about hydraulic fracturing should not be interpreted as a condemnation of disclosure with regard to hydraulic fracturing. Rather, this serves as a reminder that disclosure must be considered in the context of information available to industry experts when assessing its efficacy.

The connection between disclosure mechanisms and environmental protection is not an ironclad link that can always be assumed to be true. Disclosure mechanisms simply compel transparency⁸¹. The compulsion toward more stringent environmental management is entirely dependent upon the context of the disclosure mechanism and whether it is paired with further provisions that make the information public or empower people to take legislative action. Disclosure mechanisms have often been included in legislation dealing with corporate research and development, arguably before their inclusion in environmental legislation⁸². In a non-environmental context, disclosure mechanisms sought to ensure equitable business practices and prevent illegal activity around trading, research and development, or other areas of business⁸³. Disclosure may also simply collect information about environmental harms⁸⁴. This must be paired with provisions such as private citizens' right to sue based upon violations discovered through disclosure in order to have an impact in preventing environmental harm⁸⁵. There was no inherent link to environmental responsibility and it is erroneous to draw one.

⁸⁰ *Ibid.* 72

⁸¹ *Ibid.* 20

⁸² Entwistle, Gary M. 1999. Exploring the R&D disclosure environment. *Accounting Horizons* 13 (4) (Dec 1999): 323-41.

⁸³ *Ibid.* 82

⁸⁴ *Ibid.* 72

⁸⁵ *Ibid.* 72

Mandatory disclosure provisions in environmental legislation are a tool aimed at increasing awareness, and even action, to achieve environmental protections. If this comparison is simplified, it follows that disclosure mechanisms in environmental legislation will benefit the environment. Some government actors apply disclosure to environmental policy to strengthen the content of the bill without requiring extensive regulatory or permitting systems that call for substantial government action⁸⁶. Disclosure mechanisms are perhaps a more appealing regulatory tool to politicians that still result in legislation that improves environmental protections.

The inclusion of disclosure mechanisms results in a stronger piece of legislation in a variety of ways. Disclosure increases the availability of information on pollution and emissions as a result of industry practices⁸⁷. Disclosure can occur either through government-enforced information retrieval or through mandatory self-reporting⁸⁸. Both methods are effective in different situations, often dependent upon the industry in question. Specifically, industries that are more reticent are often bigger polluters or harm the environment in some other way, thus disclosure of any kind is more harmful to them⁸⁹. Thus, it is fair to assume that highly polluting industries that are resistant to disclosure mandates may require government-enforced information retrieval if the public is to gain a full understanding of the environmental practices that the industry engages in.

⁸⁶ *Ibid.* 18

⁸⁷ Anbumozhi, Venkatachalam, Qwanruedee Chotichanathawewong, and Thirumalainambi Murugesu. 2011. Information disclosure strategies for green industries. *Asian Development Bank Institute*(305).

⁸⁸ *Ibid.* 87

⁸⁹ *Ibid.* 87

Disclosure need not always take the form of reporting, whether voluntary or mandatory. It can also be a solely governmental action that impacts a given industry, such as mandatory labeling⁹⁰. In this context, the government compels industry to release some information and then distils this information and creates a system to codify it and easily present it to consumers⁹¹. When the government releases the information directly to the public without any further action mandated from industry actors, disclosure is not directly harmful to industry but rather it is entirely dependent upon the public's reaction to the disclosed information.

Disclosure has been linked with increasing levels of oversight in environmental legislation, which contributes to the perception that disclosure “strengthens” a bill. This occurs when disclosure is paired with other legislative provisions that make information public or in other ways allow people to act upon the information revealed⁹². If the inclusion of disclosure mechanisms “strengthens” an environmental bill it must be considered what constitutes a “strong” bill. If the premise is accepted that disclosure in environmental legislation is beneficial to the environment then it follows that bills that contain disclosure mechanisms result in more stringent environmental standards and by extension more expansive environmental protections. By these metrics, bills that are more protective of the environment should be considered “stronger”.

Furthermore, if it is accepted that disclosure mechanisms strengthen environmental legislation by benefitting the environment more than legislation that

⁹⁰ *Ibid.* 87

⁹¹ *Ibid.* 87

⁹² *Ibid.* 72

does not include such provisions then it also follows that groups that support environmental protection would advocate for disclosure mechanisms. While the Democratic Party is less clearly aligned with environmentalism than groups whose sole mission is environmental protection, the Party also falls within the camp that supports disclosure mechanisms in environmental legislation⁹³. This is not to say that the Democratic Party is a homogenous group that uniformly supports all disclosure in environmental legislation. Further, this is not to say that Republicans uniformly dislike disclosure in environmental legislation⁹⁴. Indeed, individual members of both parties have explicitly gone against these average preferences over environmental protections⁹⁵. It is only appropriate to comment on the median viewpoint of the Democratic and Republican Parties regarding disclosure in environmental legislation: the Democratic Party supports, on average, a wider variety of disclosure in environmental legislation and it does so more frequently than its Republican counterpart.

Both Democrats and Republicans may support disclosure in different legislation. It is erroneous to assume that because Democrats tend to support more disclosure in environmental legislation that Republicans that these preferences will transfer to other areas of policy. It is more accurate to examine specific factors, particularly the political climate surrounding a given issue, to determine party preferences over disclosure on a case-by-case basis. The conclusions drawn apply

⁹³ *Ibid.* 46

⁹⁴ *Ibid.* 46

⁹⁵ *Ibid.* 46

only to the median opinions among Democrats and Republicans toward information disclosure regarding environmental legislations.

EXPECTED ACTIONS OF DIFFERENT GOVERNMENTS

It has been discussed that Democrats are more likely to support disclosure mechanisms in environmental legislation than Republicans. It follows logically that governments controlled by Democrats are more likely to propose and pass environmental legislation that contains disclosure mechanisms than are governments controlled by Republicans. Democrats frequently support more expansive environmental protections that call for relatively high government involvement and thus support stronger environmental legislation, which often includes disclosure mechanisms. Republicans support the opposite: less environmental regulation, less government action, and correspondingly weak environmental legislation without disclosure mechanisms. When either party controls a government it will more often pass its preferred type of legislation.

These predictions over preferences apply on both national and state levels. On a broad national level, this expected behavior will apply in many cases. It is less predictable on a state level. There are differences between state-level parties that may invalidate predicted behavior. It is to be expected that some states will be more liberal or conservative than others, even if the same party controls them. The preferences that have been discussed for Democrats and Republicans refer to the parties on a national level and should be considered a median for both parties' behavior, with anticipated variation from hypothetical preferences.

Thus, Democrat or Republican-controlled governments at any level of government will not always pass stringent or non-stringent environmental legislation respectively. A spectrum of opinion exists within either party that informs its decision-making. It is to be expected that extreme legislators on either end of the spectrum may advocate either for legislation that more closely aligns with their opponent party's stances or legislation that is more radical than what the majority of the party supports. In either case, these extreme opinions may halt a legislature or force it to pass more moderate legislation than what might be expected based upon its theoretical preferences.

It is also necessary to consider the effect that split governments have on the type of legislation passed. Every state but one in the US has a bicameral state legislature split between a lower house- a General Assembly or a House of Representatives- and an upper house- a Senate. The only exception to this rule is Nebraska, which has a unicameral, non-partisan Senate. In addition to their legislative branches, the states also have a partisan governor who must sign off on proposed legislation. Nationally, a fairly equal distribution of states are entirely controlled by Democrats or Republicans and those that have some combination of the two major parties controlling different branches of the state legislature.

In recent years, there has been a trend toward more split-party control of legislatures⁹⁶. This is a relatively recent phenomenon that has emerged in the past decade and it coincides closely with reemergence of legislation pertaining to

⁹⁶ Goodman, Josh. 2013. 2013: A year of big majorities. *Stateline: The Daily News Service of the Pew Charitable Trusts*, January 22, 2013, 2013.

hydraulic fracturing⁹⁷. Thus, it is likely that many states had split-party control of their legislature in the early years during which they were considering hydraulic fracturing legislation. This trend has seen a reversal in the past few years, so a single party may now control legislatures that were previously split⁹⁸. This trend played itself out in broad waves of support for Democrats in 2008 and then Republicans in 2010⁹⁹. Both parties had significant wins at all levels of government during their respective years¹⁰⁰. These trends led to more state governments under the control of only one party.

The differences in the type of legislation passed by states that are uniformly controlled by one party and those that are not can be compared to the effect of “safe” seats on legislation. “Safe” seats are analogous to states that are controlled by one party in both houses and the governor’s seat. Both cases result in less opposition from the minority party. Thus the majority can move in a direction further to the left or the right, with all-Democratic states generally trending to the left and all-Republican states generally trending to the right¹⁰¹. This occurs because the dominance of one party allows for more extreme positions, usually a reflection of public preferences that are more extreme than a given national party’s platform¹⁰². This effect is further magnified when the same party also controls the governor’s seat¹⁰³. When one party controls all three entities it is able to pass

⁹⁷ *Ibid.* 96

⁹⁸ *Ibid.* 96

⁹⁹ *Ibid.* 96

¹⁰⁰ *Ibid.* 96

¹⁰¹ *Ibid.* 96

¹⁰² *Ibid.* 96

¹⁰³ *Ibid.* 96

generally a large volume of legislation and specifically legislation that is further to the left or right than what would be expected from split party governments¹⁰⁴.

States that have split legislatures, or uniform legislatures but a governor of a different party, tend to pass more centrist legislation. The variety of positions that legislators take pushes most bills to the middle on a given issue¹⁰⁵. It is to be expected that split legislatures offer more pushback from both parties on legislation¹⁰⁶. There exists in these states a large natural incentive to compromise in order to achieve legislative goals¹⁰⁷. Thus, a bill that makes it out of both houses of the split legislature is more likely reflect the majority's opinion from each house and fall in the middle of an issue rather than trend to either extreme¹⁰⁸.

When the same party controls both houses but the opposite party holds the governor's seat there is also some amount of pushback on proposed legislation. However, the governor cannot on paper offer the same amount of feedback on a bill that a legislative body can, nor can she propose a new bill of her own, so by necessity this pushback is offered less frequently¹⁰⁹. There is some expected variation in this general conclusion in the histories of individual states due to a particularly strong executive. Further, there is variation between states due to the relative differences in authority that various states' legislatures hold. A governor has veto power but it is not used the same way as a branch of the legislature can oppose

¹⁰⁴ *Ibid.* 96

¹⁰⁵ *Ibid.* 96

¹⁰⁶ *Ibid.* 96

¹⁰⁷ *Ibid.* 96

¹⁰⁸ *Ibid.* 96

¹⁰⁹ *Ibid.* 96

legislation it does not agree with¹¹⁰. Thus, a state where one party has unilateral control of both houses of the legislature will pass more legislation that is further to the left or the right- depending on which party holds the majority- than one where control of the two houses is split between Democrats and Republicans¹¹¹.

Furthermore, states where control of either legislative body or the governor's seat is split between the two major parties will pass fewer bills than states where one party controls both the legislative and executive branches.¹¹² These trends indicate that unilateral control of a state's government will allow the majority party to pass more extreme legislation than what is passed in states with split party governments.

EVOLUTION OF PARTY PREFERENCES OVER ENVIRONMENTAL ISSUES

Over time, a pattern regarding environmental regulation has emerged: it has become more stringent and preventative of perceived environmental threats¹¹³. This pattern is limited to the scope of issues that environmental legislation addresses; as public knowledge of environmental harms has increased, there are more known issues that can be regulated and specifically more that the public supports regulating. With this shift toward more regulation there has also been a shift in party support of environmental issues toward a sharp divide along party lines. At the beginning of the twentieth century, both major parties had leaders who supported environmental causes- as they were defined in that era ¹¹⁴. These leaders serve as a proxy for the median opinions that their parties espoused at the time.

¹¹⁰ *Ibid.* 96

¹¹¹ *Ibid.* 96

¹¹² *Ibid.* 96

¹¹³ Shabecoff, Phillip. 2001. *Earth rising: American environmentalism in the 21st century*. Island Press.

¹¹⁴ Vig, Norman, and Michael Kraft, eds. 2013. *Environmental policy: New directions for the twenty-first century 8th edition*. 8th ed. Sage Publications.

Individual politicians from a party may have held divergent opinions, and even entire state parties may have differed from their national branch. However, the party leaders serve as a useful proxy to understand the broad opinions of the party in a given time period. This status quo of focusing on specific environmental issues at the state and federal levels, often centered around land preservation or small-scale pollution cleanup, continued until the 1960s, when the public began to place a much greater emphasis on environmental protections, specifically the regulation of air and water pollution¹¹⁵.

Trending preferences for and against environmental regulations among Democrats and Republicans respectively describe shifts in behavior over time for the national parties. These preferences cannot be applied in every case to state level parties. However, it is useful to use the national party as a proxy for the median opinion among all state-level parties. That is to say, certain states' Republican or Democratic parties may differ from the national parties on given issues but an aggregation of all state level parties' opinions on a given issue will closely approximate the national party's stance. If a certain party differs drastically from the national party on an issue this is worth noting, but otherwise it is fair to assume that the state party follows the outline set forth by the national party's platform.

There is no single definitive answer as to why the environment was shifted to the left side of the aisle and not the right. Potentially, this directional shift occurred because new environmental protections required an increased federal or state

¹¹⁵ Environmental history resources timeline. 2013 [cited November, 14 2013]. Available from http://www.eh-resources.org/timeline/timeline_industrial.html.

government presence¹¹⁶. Baseline environmental protections were first included in US law in the beginning of the twentieth century¹¹⁷. Over time more legislation has been passed that increased the scope and breadth of protections offered¹¹⁸. Early legislation in this field codified simple environmental protections and required little government action but naturally things have grown more complicated with time¹¹⁹. Thus, it is possible to some extent to conflate positions on environmental regulation with positions on federal regulation more generally. Republicans have, over the last century, increasingly associated themselves with a hands-off approach that limits federal government intervention¹²⁰. In contrast, Democrats have increasingly aligned themselves with progressive policies that call for strong government presence¹²¹. As environmental regulations grow more complicated they inherently call for more government action and this need pairs more closely with Democratic ideas¹²².

Democrats also tend to focus on the necessity of social justice and the equality of outcome more than Republicans¹²³. They argue that representative government has an obligation to ensure not only equality of opportunity but also to some extent the equality of outcome for citizens¹²⁴. Environmental regulation,

¹¹⁶ Farber, Dan. 2012. Why the environment requires government protection: Some simple economics. *Legal Planet*.

¹¹⁷ Natural Resources Defense Council. Environmental laws and treaties. 2014 [cited January 10 2014]. Available from <http://www.nrdc.org/reference/laws.asp>.

¹¹⁸ *Ibid.* 117

¹¹⁹ *Ibid.* 117

¹²⁰ Grigsby, Ellen. 2008. *Analyzing politics* engage Learning.

¹²¹ Farber, Dan. 2012. Why the environment requires government protection: Some simple economics. *Legal Planet*.

¹²² *Ibid.* 121

¹²³ *Ibid.* 121

¹²⁴ *Ibid.* 121

specifically disclosure, pairs well with this belief¹²⁵. In contrast, Republicans argue that this level of equality represents untoward government interference¹²⁶.

Disclosed information is made available to everyone. Thus, it may be used by anyone to alleviate environmental harms or prevent future damage. Democrats tend to support the necessity of this publicly available information because they place a larger emphasis on issues of equality than do Republicans, thus they more frequently support disclosure¹²⁷.

Republicans tend to focus more on the importance of maintaining free markets¹²⁸. They agree with Democrats regarding equality of opportunity, but beyond this point they place greater emphasis on the necessity for markets to operate without government influence rather than equality of outcome¹²⁹.

Democrats argue that free markets actually place unfair burdens on disadvantaged sectors of the population; in essence they are not “free” for a large portion of the population¹³⁰. Republicans accept the premise that there will be some economic losers¹³¹. They place more value in deregulating markets to allow them to function completely privately¹³². This does not pair well with disclosure in many cases, which inherently calls for the government to regulate industry. Thus, Republicans can be expected to support disclosure less frequently than Democrats.

¹²⁵ *Ibid.* 121

¹²⁶ *Ibid.* 120

¹²⁷ *Ibid.* 121

¹²⁸ *Ibid.* 120

¹²⁹ *Ibid.* 120

¹³⁰ *Ibid.* 121

¹³¹ *Ibid.* 120

¹³² *Ibid.* 120

Under this assessment, observed voting patterns regarding disclosure in environmental legislation can be explained both because Democratic legislators are actively voting for environmental protections and also because Republican legislators are actively voting against them. Both parties' actions can be explained through strict adherence to the stated preferences of their party over government intervention.

Increasing partisanship has resulted in districts that are firmly Republican or Democratic, particularly on the national level¹³³. Unlike broad ideological patterns, it is difficult to adapt the trend toward firm regional stratification between Republicans and Democrats directly to state legislatures. On one hand, voting patterns do suggest that legislators frequently vote along party lines¹³⁴. This is a clear indication that partisanship plays a role in state legislatures. There have also been decreasing instances of split party legislatures on the state level in recent years¹³⁵. However, there is a seemingly large contradiction to this conclusion: state legislatures have frequently changed partisan hands in recent years¹³⁶. There have been sweeping trends that favored either Democrats or Republicans and resulted one party or the other gaining control of state and local level jurisdictions around the country¹³⁷. The wave of Democratic wins in 2008 ushered in a new era of control of the national executive branch and expanded control of both houses of the

¹³³ Kohut, Andrew. 2012. *Partisan polarization surges in bush, Obama years*. Pew Research Center.

¹³⁴ *Ibid.* 133

¹³⁵ *Ibid.* 133

¹³⁶ Keele, Luke. 2005. *The authorities really do matter: Party control and trust in government*. *The Journal of Politics* 67 (3).

¹³⁷ *Ibid.* 136

national legislative branch¹³⁸. Democrats also won seats at both the state and local level in 2008; there was a consensus of support for the party at all levels of government. This control lasted for two years, until Republicans enjoyed a similar wave of wins in 2010 that gave them control over part of the national legislative branch and strong support at lower levels of government¹³⁹. These two trends indicate that control over state government can more easily change hands than control over the national government.

The waves in 2008 and 2010 for Democrats and Republicans respectively are departures from the norm of the preceding years. There was a status quo of control that existed between the two major parties roughly from 1990-2007¹⁴⁰. This is notable not for which parties controlled specific aspects of government but rather for the fact that this control was relatively steadily fixed between the two parties¹⁴¹. On its face, the lack of turnover seems to fit with the notion of increasing partisanship¹⁴². Increasing partisanship results in more gerrymandered districts that are less likely to change hands¹⁴³. However, the 2008 and 2010 waves of support, which manifested themselves through each party taking control of lower levels of government, do not fit with the assumption that legislative districts should be increasingly fixed with more partisanship. A large wave of support for one party or the other is not uncommon and could be interpreted as a hallmark of increasing partisan divides. However, such large turnover between parties on the state and

¹³⁸ *Ibid.* 136

¹³⁹ *Ibid.* 133

¹⁴⁰ *Ibid.* 133

¹⁴¹ *Ibid.* 133

¹⁴² *Ibid.* 133

¹⁴³ *Ibid.* 136

local level is unexpected if one considers that increasing partisanship is expected to pair with more firmly entrenched partisan districts¹⁴⁴.

State legislatures do, however, change partisan hands more frequently than national legislatures¹⁴⁵. This could be the result of different restrictions on the state bodies that impact turnover rates, both in terms of legislators and partisan control. Many states place term limits on their legislative branches. This results in less loyalty to particular legislators and opens the door for more turnovers in personnel¹⁴⁶. Voters in state-level elections are not necessarily loyal to an individual legislator for many years, which opens the door to making more frequent switches in the party they vote for¹⁴⁷. This is not meant to make any comment over voting patterns in state-level races, but rather to note that voters in these races see more turnovers among candidates due to term limits. Though the trends seen among state legislatures cannot be attributed solely to one cause, examination of term limits may help explain the more frequent shifts in partisan control of state legislatures. This trend differs between state and national governments, unlike the broader ideological conversation around increasing partisanship that is more similar between the two levels of government.

These trends toward increasing partisanship in American politics are not specific to environmental issues but they have played a large role in the partisan support that environmental protection currently enjoys. Partisan trends have

¹⁴⁴ Warnock, Kate. 2014. *Partisan composition*. NCSL.

¹⁴⁵ Stonecash, Jeffrey, and Anna Agathangelou. 1997. *Trends in the partisan composition of state legislatures: A response to Fiorina*. *The American Political Science Review* 91 (1).

¹⁴⁶ *Ibid.* 145

¹⁴⁷ *Ibid.* 145

influenced the entire political landscape by pushing Democrats and Republicans apart on all issues of governance. The largest impact on environmental issues has come from the opposing positions each party has taken on the question of scope regarding federal regulation. Environmental legislation increasingly calls for comprehensive oversight. Democrats are generally in favor of granting the government this authority while Republicans are not. Thus, Democrats have become associated with environmental protection by supporting large-scale government action at different levels of government while Republicans oppose these measures.

IDEOLOGICAL DIFFERENCES BETWEEN PARTIES

The Republican and Democratic Parties each have a set of beliefs that they embrace in their official party platforms that guide their views in all legislative decisions they make. The two parties address the same broad issues in the explanations of their respective philosophies but they often approach them from different angles. For example, when discussing environmental protections the Republican Party platform focuses on conservation and the necessity of balancing economic development and private property rights in the short run with conservation goals over the long run¹⁴⁸. In contrast, the Democratic Party platform discusses environmental protection in the context of preserving natural areas for future generations and explicitly rejects the idea of creating a dichotomy between healthy economy and healthy environment¹⁴⁹. These two platforms advance the parties' respective positions on environmental protection by addressing points that can make positive statements about each Party's position in different ways.

¹⁴⁸ Republican Party. 2012. *2012 Republican Party platform*.

¹⁴⁹ Democratic Party. 2012. *2012. Democratic party platform*.

Throughout American history there have been two parties but they have changed their ideological affiliation with the “left” and “right” or “conservatism” and “liberalism” over time¹⁵⁰. In the modern political lexicon, the Democratic Party is aligned with the left, espousing progressive values through increased government action and robust social programs¹⁵¹. The Democratic Party suggests that government at all levels should have authority to manage social programs in order to improve people’s lives and to oversee industry to ensure that there are no violations that may negatively impact private citizens¹⁵². The Republican Party is on the right in modern politics, focusing its efforts on reducing inefficiencies in government and protecting basic freedoms¹⁵³. The Republican Party suggests that it is necessary to reduce the size of government at all levels; it suggests that many tasks currently under the government’s purview could be handled more efficiently and cost effectively by private entities¹⁵⁴. There is expected variation among individual members of the Parties, to the far left and right and more toward the center, but these positions can be considered a median representation of Democratic and Republican ideologies.

Neither Party’s platform directly mentions hydraulic fracturing, likely because this is a relatively new issue and rather contentious. National platforms are written in a relatively ambiguous manner to avoid contention and allow the Party room for interpretation when it decides on legislative actions¹⁵⁵. However, from

¹⁵⁰ Gerring, John. 2001. *Party ideologies in America, 1828-1996*. Cambridge University Press.

¹⁵¹ *Ibid.* 150

¹⁵² *Ibid.* 149

¹⁵³ *Ibid.* 150

¹⁵⁴ *Ibid.* 148

¹⁵⁵ *Ibid.* 150

reading the Parties' stances on the environment and government authority as well as statements from leading members of both Parties it is possible to make some statements regarding their views on this issue. The Democratic Party broadly supports a cautious approach to the hydraulic fracturing process with necessary government and citizen oversight¹⁵⁶. Democrats suggest that thorough research of hydraulic fracturing methods and projected impacts from proposed operations must occur before beginning drilling¹⁵⁷. The Republican Party takes a more favorable view of hydraulic fracturing; it suggests that this new method of natural gas recovery will provide jobs and American energy independence¹⁵⁸. Republicans support hydraulic fracturing based upon existing knowledge, focusing on the economic benefits that arise as a result of the process¹⁵⁹. The positions of each party should once again be considered a median for individual politicians' views on hydraulic fracturing. Strong positive or negative impacts for politicians' constituencies may serve to swing their opinion away from what could be expected based upon their party affiliation. That is to say a Republican from a district that will be negatively impacted by hydraulic fracturing may not support the process or a Democrat from a district that stands to benefit greatly from hydraulic fracturing may in fact support it. Median preferences represent a hypothetical starting point for examining the Parties' stances on hydraulic fracturing with necessary allowances to be made for deviation from the median due to specific legislators' concerns.

¹⁵⁶ *Ibid.* 149

¹⁵⁷ *Ibid.* 149

¹⁵⁸ *Ibid.* 148

¹⁵⁹ *Ibid.* 148

METHODS

Based upon previously discussed trends, it can be assumed that Democratic-controlled states are more likely enact hydraulic fracturing legislation that includes disclosure mechanisms more frequently than are Republican-controlled states. This study will seek to examine whether this prediction will play out in various state governments throughout the United States. In order to quantify this prediction, this study examined enacted bills from different states pertaining to hydraulic fracturing. It compared them based upon a stringent/ non-stringent classification, which was defined through various criteria: whether they include any disclosure mechanisms and if so what kind, what state the bills were passed in, whether they were proposed by a Democrat or a Republican, the partisan composition of the passing state's legislature, the total vote counts for each bill, which party controls the governor's seat, whether the bills were passed upon its first introduction, whether the bills were introduced separately or with a package of bills, when they were introduced, and what factors external to the government may have impacted a bill's reception.

The bills selected were from both Democrat-controlled states and Republican-controlled states. All of the bills were from 2012 or 2013. This set time frame helped control for potential changes in the political climate regarding hydraulic fracturing. There has been substantial legislative action surrounding hydraulic fracturing since the early 2000s and it has increased each year. Hydraulic fracturing, especially new horizontal drilling methods, were relatively unknown but as the public and legislators learned more, legislation changed its focus to

incorporate updated knowledge. It is difficult to predict or control for changes over a long period of time. Thus, the study confined itself to a relatively small two-year period. Furthermore, it focused on the most recent legislation from the past two years because this was considered the most salient to future action on this topic. Consideration was given to past legislation if it impacts the legislation under consideration, i.e. if one of the bills being discussed is an update or direct response to prior legislation. Otherwise the study confined itself to legislation from 2012-2013 pertaining to disclosure in hydraulic fracturing legislation.

The study initially sought to control the time frame differently by limiting legislation to be considered between 2008-2012. However, it was considered imprudent to exclude legislation passed in 2013 because this time period encompasses many bills on the subject of hydraulic fracturing that are germane to the study. As long as legislation met other criteria, it was included for consideration if it was from 2013. Further, there was a relatively lower volume of bills passed in 2008-2011 pertaining to hydraulic fracturing and even fewer that dealt with mandatory disclosure mechanisms. Thus, it was decided that it would be unnecessary for the study to expand its timeframe to include 2008-2011. The study did not speculate about future efficacy of the legislation due to the unpredictable and unconfirmable nature of such predictions. The study conducted a close analysis of legislation pertaining to disclosure in hydraulic fracturing and it briefly discussed legislation pertaining to hydraulic fracturing generally.

All of the bills examined were enacted pieces of legislation only. Enacted legislation has concrete voting data that can be examined to determine patterns and

analyze whether they fall along party lines, as could be expected. Bills that have been enacted into law were also preferred over proposed legislation because this eliminates any radical legislation that may have been introduced without the legislator in question intending to actually see it through the entire legislative process. Bills where the sponsor did not intend to see them through the legislative process were not included in this study because they cannot be guaranteed to accurately represent the dominant views of the introductory legislator's party. For this same reason, the final enacted text of a bill was given priority in the analytical process, though radical changes from earlier versions were noted if they affected the final text of the bill.

The decision was made to include bills from governments controlled by each major party in order to allow for a robust sample of hydraulic fracturing legislation that captures the dominant mood of each party. This allowed for a comparison of different iterations of Democrat and Republican-backed hydraulic fracturing legislation. While it was not possible to completely control for how extremely Democratic or Republican a state's government is, the nature of each state government was documented. This level of liberalism or conservatism was considered in the final analysis of the bill- its classification as stringent or non-stringent- if it was deemed to have an effect on the classification.

In coding bills as either stringent or non-stringent, this study evaluated all of the above-mentioned factors for each case (proposing party, vote count, partisan composition of the state government, separate bill or package, date of introduction, action from extra-governmental sources during drafting). Classification considered

the state's relationship with the FracFocus database and whether the bill changed this relationship. Non-stringent bills were those that do not mandate reporting information to FracFocus and leave this to the discretion of the industry actor. Semi-stringent bills were those that ~~encourage~~ did not make any mention of disclosure that would go beyond the existing option of reporting to FracFocus ~~but do not go any further~~, either with a separate state-specific system or the capacity to sue for violations found in the mandatorily disclosed information. Stringent bills were those that mandate reporting to FracFocus or create a separate state-specific system for mandatory information disclosure or allow either government actors or private entities to sue industry violators. This determination focused especially on the inclusion of rigorous disclosure mechanisms that are enforced by the state; these will lead to a stringent classification. The presence of these new opportunities for disclosure is linked to what can be done with the information that is made public. The existing FracFocus system does not provide for any recourse regarding information that is in violation of state statues for waste water content or disposal methods, well location or depth, etc. New state-specific disclosure provisions rectify this and offer opportunity for action in response to violations as they arise.

Thus, the stringent or non-stringent classification was considered a summation of the bill's attitude toward the proliferation or cessation of hydraulic fracturing in the state. Bills that include new state-specific disclosure mechanisms that intend to regulate or limit hydraulic fracturing were considered stringent. Bills that did not include new methods for disclosure and instead relied only upon voluntary reporting to FracFocus will be considered non-stringent. Bills that did not

~~make any mention of disclosure that would go beyond the existing option of reporting to FracFocus, through a separate state-specific system or by offering citizens the capacity to sue for violations. Bills that encouraged reporting to FracFocus and included some type of provisions for disclosure short of a new public database to replace FracFocus~~ were considered semi-stringent. Bills were read by the author and one additional person and given independent ratings. The two were compared and a single consensus rating was applied. The second reader was also an undergraduate student familiar with hydraulic fracturing legislation and disclosure mechanisms, though not with the particular bills in this study. The second reader discussed with the author the meaning of stringent, semi-stringent, and non-stringent classifications before reading any of the cases. After comparing independent ratings, the author and second reader found their ratings agreed in all cases. Thus, the measures of stringency can be considered generally valid.

	Reporting to FracFocus	New state-enforced disclosure mechanisms?	Provision to make information public/ accessible to private citizens?
Stringent	Yes <u>OR</u>	Yes	Yes
Non-stringent	No mention	No	No
Semi-stringent	Yes <u>Not mandatory</u>	No	Varies

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Each bill that was considered as a separate piece of legislation. However, it was noted and discussed if the bill was a part of a larger legislative package, either about similar environmental issues or simply a general group of bills. Whether a bill

was introduced separately or as part of a larger package can have a profound impact upon the content of the bill and its trajectory through the legislature. Bills that are considered separately may face higher scrutiny and thus may contain less extreme measures, especially if they have a high profile and are subject to much editing and debate throughout their consideration by the legislature. Conversely, bills that are part of a group of bills may face less scrutiny and thus may include more extreme measures in either direction.

For a similar reason, the composition of a state's government was also considered. Based upon the observed patterns of partisanship within American politics, it can be predicted that governments that are heavily weighted toward one party will exhibit more extreme behavior than those that are more equally composed of legislators from both parties. One-party-dominated states display Republican or Democratic voting behavior more frequently but they also display more extremely Republican or Democratic voting behavior than their mixed-party equivalents. Due to the increasing divide between the two major American parties, each group has moved further to the left or right on the political spectrum. The growing divide and shrinking incentive for compromise dictate that when parties are unencumbered by legislators from the opposition they can move further to the extremes of the political spectrum.

It is also important to consider whether external factors influenced the bill's trajectory. If it is a high profile piece of legislation, a bill may receive either endorsement or condemnation from a variety of nongovernmental organizations. These groups vary in their capacity to influence policy but certain groups can have a

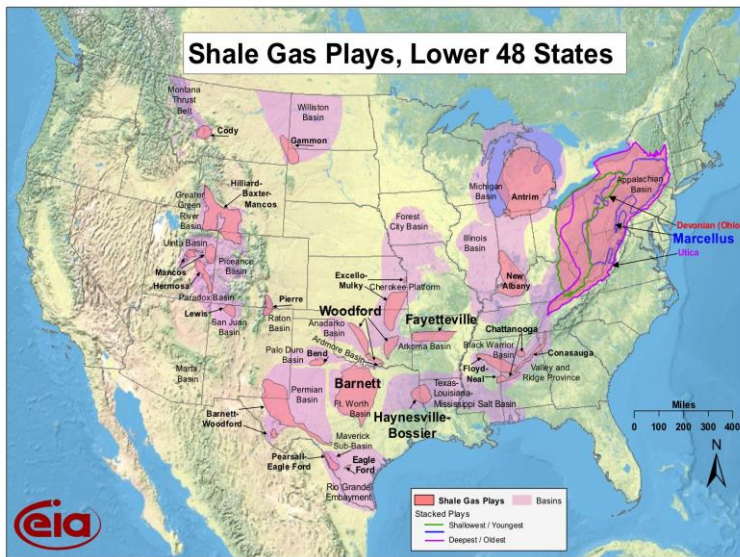
very strong effect. Environmental organizations may lobby for more protection or they may rally against a particularly non-stringent bill. Conversely, industry representatives may use their influence to ensure that bills do not unduly affect established business practices and in doing so may lobby against new environmental protections. These different extra-governmental groups' power lies in making their opinion publicly known and trying to influence legislators to respond to these pressures.

External factors are expected to vary between cases. Each state has a different set of extra-governmental organizations that affect the trajectory of bills within their borders. The impact of these varying groups will be assessed based upon demonstrable action that they take. If they visibly support or speak against the bill, their opinion will be considered in the assessment of its stringency. These public responses may come from environmental interest groups, non-partisan governmental entities, etc. States may also have unique geographic conditions, such as particularly large deposits of natural gas or natural disasters that shape public opinion of hydraulic fracturing. Furthermore, some bills make provisions other than disclosure regarding hydraulic fracturing, which may impact the entire bill's reception.

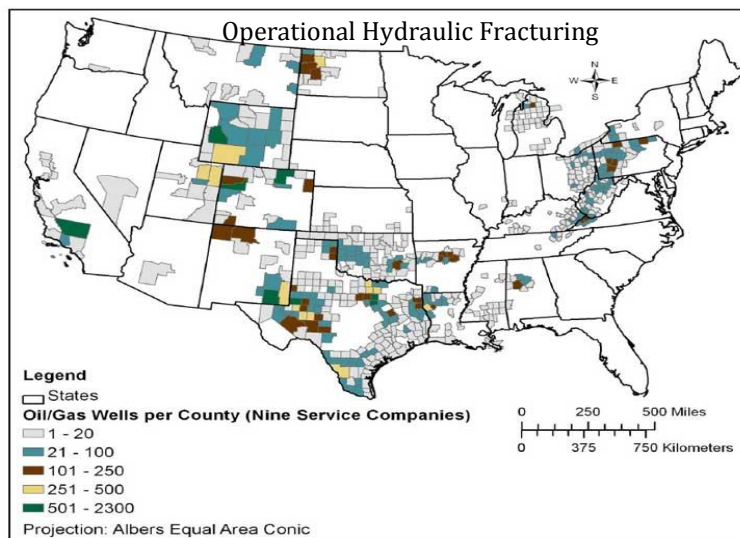
All bills selected came from the National Council of State Legislatures (NCSL) database. Enacted legislation from 2012 was sorted by the same categories decided upon by NCSL: levels of governance and hydraulic fracturing, taxes, disclosure, and other. The list of enacted legislation from 2013 was also taken from the NCSL database. The bills were not categorized by NCSL in this case, so the author sorted

them into the following categories: tax implementation, mandatory study, permitting, classification, disclosure, and other. The categories for 2013 legislation were based upon the content of the bills from that year, not simply matched to the 2012 categories.

ANALYSIS OF CASES



Source: Energy Information Administration based on data from various published studies. Updated: March 10, 2010



HYDRAULIC FRACTURING LEGISLATION IN 2012

In 2012, fourteen states enacted fourteen pieces of legislation related to hydraulic fracturing. The bills spanned a range of topics related to hydraulic fracturing: five states addressed levels of government, seven states addressed hydraulic fracturing in some other manner, and three states addressed fracking fluid disclosure.

Bill	Level of government	Other
ID HB 464	local restrictions related to oil and gas production	
KS HB 2526	Kansas Corporation Commission can regulate hydraulic fracturing	
ND HCR 3053	limit the EPA's ability to regulate hydraulic fracturing	
SD HCR 10005	sole responsibility for the regulation of hydraulic fracturing to the states	
UT SCR 12	sole responsibility for the regulation of hydraulic fracturing to the states	
ID HB 379		tax on all oil and gas produced, sold, or transported
MD HB 1123		presumptive impact area around hydraulic fracturing wells
NC SB 820		updated regulatory program to manage horizontal drilling
OH SB 315		provisions for horizontal hydraulic fracturing well production
OK SB 885		gross production taxes associated with natural gas extraction
TN HR 98		regulations to provide oversight for fracking

In 2012, there were also three pieces of legislation that dealt specifically with information disclosure related to hydraulic fracturing operations. Indiana HB 1107 required the Natural Resources Commission to adopt rules address the reporting and disclosure of hydraulic fracturing treatments. Louisiana HB 957 mandated the disclosure of fracking fluid composition within 20 days after a hydraulic fracturing well is first created. Finally, Pennsylvania HB 1950 addressed a number of topics within disclosure including impact fees, well setbacks, local ordinances, and well location restrictions, which all dealt with information disclosure. Further analysis will determine the relative strength of each bill as well as the intent with regard to environmental protection.

Bill	Legislature	Classification	External Factors
IN HB 1107	Republican	Semi	Criticism from environmental groups
LA HB 957	Republican	Stringent	Natural disaster
PA HB 1950	Republican	Semi	National-level attention, criticism from environmental groups

INDIANA HOUSE BILL 1107

Indiana HB 1107 was first introduced in the Indiana State House of Representatives on January 9, 2012 by Representative Eric Allan Koch (R- Bedford). The House passed it upon a third reading Yea: 95, Nay: 0, Not Voting: 2, Absent: 3, on January 31, 2012. The bill was then referred to the Indiana State Senate, where it was introduced by Senator Beverly Gard (R- Greenfield) and passed on a third reading Yea: 50, Nay: 0, No Vote: 0, Absent: 0, on February 21, 2012. The governor

then signed the bill into law on February 29, 2012. It was scheduled to take effect starting on July 1, 2012. Republicans controlled the State House, State Senate, and Governor's seat at the time that HB 1107 was introduced and passed. HB 1107 was introduced as a single piece of legislation, not as a part of a larger package of bills.

Indiana HB 1107 includes several provisions for information disclosure. The bill requires industry to share the volume and source of base fluid used, a description of each additive product used in a hydraulic fracturing treatment, the volume of each additive product used in a hydraulic fracturing treatment expressed as a maximum percentage of the total fracturing fluid volume, the maximum surface treating pressure and injection treating pressure, and any other information the Natural Resources Commission considers necessary. All of these disclosure requirements are aimed at the technical side of hydraulic fracturing. They deal with scientific parameters that are endemic to the hydraulic fracturing process. The bill does not deal with any disclosure requirements that can clearly be interpreted as an attempt by the government to limit the harms caused to existing communities by the placement of hydraulic fracturing operations. For example, some states have passed caps on the number of wells that can be built near existing towns or the minimum distance between a well and residences or businesses. Indiana HB 1107 does not deal with this type of mandatory disclosure. It also does not make provisions for what should be done with the information once the state government has collected it. There is no mention of either the government making the information public or whether the information will be available upon request to the public.

Both the disclosure of technical information and disclosure aimed at addressing community impacts caused by hydraulic fracturing indicate some level of stringency. However, disclosure of community impact should be considered more stringent than disclosure of technical information. Disclosure of technical facts merely makes the information available to the government. On its own, this type of disclosure does not make information publicly available. It may be paired with a provision to make information public, either through a state-managed database, upon request by private citizens, or by another method. Technical information disclosure is not always paired with such provisions. This type of disclosure consists of industry actors sharing information about their practices with the government. In contrast, disclosure of information about community is centered on factors that directly affect a site of proposed or existing hydraulic fracturing. The information disclosed in this case may be the allowable distance between drilling wells and residences, or the duration of drilling operations at one site, or any other factor that directly impacts people living near hydraulic fracturing operations. Unlike more technical information, disclosure provisions specifically aimed at addressing community impact of hydraulic fracturing have an inherent link to the public welfare. Thus, this information is more stringent because the content that is being disclosed has a direct impact upon citizens' wellbeing. Even if disclosure of community impacts is not explicitly paired with another provision that makes the information public, disclosing this information indicates a level of consideration of human impact by industry that is higher than merely disclosing technical facts.

Indiana HB 1107 can be considered to be semi-stringent legislation in regulating hydraulic fracturing. It includes measures that mandate information disclosure by the hydraulic fracturing industry and thus does attempt to regulate the industry. Furthermore, there is a provision stating that the Indiana Natural Resources Commission may collect other information it deems necessary. This clause can be interpreted differently based upon the leadership of the Commission. The possibility exists that the Commission could use this to ask for more technical information than what is listed or it could go further and ask for information regarding community impacts. The bill does not, however, create a separate publicly available database for the disclosed information. The bill also makes no mention of whether information collected about industry practices will be made publicly available, either by the government or upon request by individuals.

LOUISIANA HOUSE BILL 957

Louisiana HB 957 was first introduced in the Louisiana State House of Representatives on March 2, 2012 by Representative John Bel Edwards (D-Amite). The House passed it upon a third reading Yea: 94, Nay: 3, Other: 9 on April 23, 2012. The bill was then referred to the Louisiana State Senate, where it was introduced on April 24, 2012 and passed again on a third reading Yea: 39, Nay: 0, on May 16, 2012. The governor then signed the bill into law on June 13, 2012 and it became Louisiana Act No 812. It was scheduled to take effect starting on August 1, 2012. Republicans controlled the State House, State Senate, and Governor's seat at the time that HB 957 was introduced and passed. The President of the Louisiana State Senate at the time was a Republican but had previously identified as a member of the Democratic

Party. HB 957 was introduced as a single piece of legislation, not as a part of a larger package of bills.

Louisiana HB 957 includes several provisions for information disclosure. The bill gives the Commissioner of Conservation the power to make any reasonable regulations that monitor the operator of a well “That utilizes the application of fluids with force or pressure in order to create artificial fractures in the formation for the purpose of improving the capacity to produce hydrocarbons,”- a hydraulic fracturing well. The bill further mandates that well operators report the type and volume of the hydraulic fracturing fluid, a list of additives used- including the specific trade name and the supplier of the additive, and a list of ingredients contained in the hydraulic fracturing fluid no later than twenty days following the completion of hydraulic fracturing operations and in a manner determined by the Commissioner. HB 957 does not hold the operator of the well responsible for reporting information that is not provided by the builder of the well due to a claim of trade secret information.

Similarly to Indiana HB 1107, these disclosure requirements are aimed at the technical side of hydraulic fracturing. They deal with scientific parameters that are endemic to the hydraulic fracturing process rather than explicit disclosure requirements intended to limit the proliferation of the hydraulic fracturing industry. They do, however, go further than the Indiana bill in monitoring and limiting the chemicals used in hydraulic fracturing operations. There is also an allowance made for the information to be disclosed to the public, “In a manner determined by the Commissioner.” That provision also provides an enormous amount of leeway for the

Commissioner of Conservation to regulate the hydraulic fracturing industry as he sees fit. The inclusion of this open-ended clause allows for the current Commissioner to take an influential role in how the hydraulic fracturing industry is regulated and even whether it is able to thrive in the state of Louisiana. That is not to say the bill states the Commissioner's goal, but the possibility exists for the Commissioner to play a proactive part in regulating Louisiana's hydraulic fracturing industry. However, an open provision is also a relatively common inclusion in legislation. It may be the case that the Commissioner does not go any further in the information he requires from industry. However, the possibility of further action does increase the probability of closer monitoring of industry than a bill that does not have such an open provision.

Louisiana HB 957 can be considered stringent legislation in regulating hydraulic fracturing. It provides for measures that regulate the hydraulic fracturing industry. The bill also makes provisions for the information that it requires industry actors to disclose to then be made available to the public in a manner determined by the Commissioner, creating a database of sorts. The bill asks for information from the hydraulic fracturing industry and then makes it publicly available, which lends itself to the classification of HB 957 as stringent.

PENNSYLVANIA HOUSE BILL 1950

Pennsylvania HB 1950 was first introduced in the Pennsylvania State House of Representatives on November 2, 2011 by Representative Brian Ellis (R- Butler). The House passed it upon a first reading Yea: 107, Nay: 76. The bill was then introduced in the State Senate, where it was passed with amendments Yea: 28, Nay:

22 on December 14, 2011. The amended bill was referred back to the State House, where the new version failed Yea: 0, Nay: 197 on December 20, 2011. The State Senate then considered the bill again. It was further amended and the State Senate passed a second version of the bill Yea: 31, Nay: 19 on February 7, 2012. The next day- February 8, 2012- the State House passed the newest version of the bill Yea: 101, Nay: 90. The Governor then signed the bill into law on February 14, 2012. The bill was written to take immediate effect. Republicans controlled the State House, State Senate, and Governor's seat at the time that HB 1950 was introduced and passed. HB 1950 was introduced as an extremely high profile single piece of legislation. It was not a part of a larger package of bills.

There were significant differences between the original versions of the bill that the State House and State Senate passed. The main differences between the two versions of the bill lay in their treatment of impact fees. The two proposals differed on whether the impact fees should be an optional tax at the county level or a single statewide tax, the amount of the impact fees, and the degree and structure of state preemption of local regulation. These differences were eventually reconciled but they resulted in numerous votes by both bodies.

Pennsylvania HB 1950 includes many mechanisms for information disclosure. The bill consolidates the Oil and Gas Act with modifications and additions relating to definitions, well permits, permit objections, comments by municipalities and storage operators, well location restrictions, well site restoration, protection of water supplies, notification to public drinking water systems, containment for unconventional wells, transportation records regarding

wastewater fluids, hydraulic fracturing chemical discharge requirements, public nuisances, enforcement orders, inspection and production of materials, witnesses, depositions and rights of entry, third party liability and inspection reports.

This bill is similar to both Indiana HB 1107 and Louisiana HB 957 with respect to its provisions regarding technical regulations of hydraulic fracturing. Pennsylvania HB 1950 examines many technical aspects of a hydraulic fracturing operation, from the initial drilling of the well and the materials used in its construction to the emissions inherent to the operation of a hydraulic fracturing well to the emergency response that may be necessary. Pennsylvania HB 1950 also includes some nondisclosure elements that impact hydraulic fracturing operations in the state. In discusses both criminal and civil penalties for violations of the bill's provisions, the placement of wells with regard to existing communities, and the necessary steps for well site restoration after a hydraulic fracturing outfit completes operations. These various provisions stem from the initial information disclosure mandates that the bill contains. The punitive measures taken for violations of the bill must be backed up with evidence of wrongdoing. This evidence can only be gathered by using information that is disclosed by industry due to provisions contained within HB 1950. Similarly, steps for restoration are based upon a response to what impact hydraulic fracturing operations had. This impact can be assessed through information that is gathered under provisions for information disclosure in HB 1950.

Pennsylvania HB 1950 can be considered to be semi-stringent legislation in regulating hydraulic fracturing. It includes measures that regulate the hydraulic

fracturing industry by gathering information about its actions and places the industry under the scrutiny of the Pennsylvania State General Assembly. However, it allows for “trade secret” exceptions to disclosure requirements for the contents of fracking fluid, which leaves large potential for noncompliance with disclosure mandates. There is also criticism that the expansive written disclosure requirements are not strict enough to compel meaningful informational reporting that will allow both government and private industry to adequately understand and monitor the Pennsylvania hydraulic fracturing industry. It has also been criticized because it takes autonomy away from local governments in favor of determinations made by the state government. There are many things written into the bill but it is less clear how compliance can be ensured or what will be done with the information once it is collected. The bill does not move beyond the FracFocus database for reporting information, nor does it mention any provisions for making information available to the public.

HYDRAULIC FRACTURING LEGISLATION IN 2013

2013 presents a much more robust sample of legislation pertaining to hydraulic fracturing. There were thirty-seven total bills enacted in twenty-two different states that pertained to hydraulic fracturing in some capacity. The bills spanned a range of topics within the realm of hydraulic fracturing: seventeen bills dealt with taxation of the materials or revenues associated with hydraulic fracturing, two bills mandated further impact studies of potential sites for hydraulic fracturing operations, four bills addressed updated or new permitting schemes for hydraulic fracturing, six bills made rules related to classification requirements for

the hydraulic fracturing industry, four bills dealt with other miscellaneous topics related to hydraulic fracturing, and four bills dealt with disclosure requirements for hydraulic fracturing operations.

Bill	Taxes
AK SB 21	Amends tax to 35% of oil or gas value
CO HB 1057	Severance tax trust fund
MS HB 1698	Reduces the natural gas and oil severance tax rate
MT HB 36	Distributes funds from the county school oil and natural gas impact fund.
MT SB 175	Redirects oil and natural gas production tax revenue from the state general fund
ND HB 1278	Amends oil and gas gross production tax allocation.
ND HB 1358	Amends oil and gas gross production tax allocation.
ND SB 2014	Establishes oil and gas research fund
OH HB 72	Modernizes how the county recorder's office maintains records
OK SB 166	Tax on certain income from oil and gas property
OK HB 2310	Relates to sales tax exemptions
OK SB 977	Consolidates to multiple versions of statutes relating to fracturing
VA HB 1233	Relates to local license tax ordinances for the severance of oil, coal or gas
VA HB 1771	Establishes fair market value for purposes of local gas severance taxes
VA SB 658	Relates to local license tax ordinances for the severance of minerals, oil and gas
VA SB 1111	Establishes fair market value for local gas severance taxes
WV SB 638	Terminates a severance tax exemption for natural gas or oil
Bill	Mandate Study
AZ SCR 4	Interim study to research potential changes for natural gas royalty payments
CA SB 4	Requires an independent scientific study on hydraulic fracturing treatments
Bill	Permitting
AL HB 503	Authorizes the Oil and Gas Board to set fees for the recovery of oil from oil sands.

FL HB 1083	Declares underground natural gas storage to be in the public interest
NC SB 76	Authorizes DNR to issue permits for oil and gas exploration
UT SB 277	Expedite the processing, granting, and streamlining of mineral and energy leases
Bill	Classification
ID HB 49	Defines Class II Injection Well as a deep injection well
MN HB 976	Provides for silica sand mining model standards and technical assistance
ND HB 1198	Defines "stripper well."
ND HB 1134	Amend gas flaring restrictions
OK SB 767	Relates to oil and gas production; updates statutory reference
PN SB 259	Amends the act of July 20, 1979 (P.L.183, No.60), adding definitions
Bill	Miscellaneous
NV SB 390	Develop a hydraulic fracturing program for the State of Nevada
TX HB 2767	Recycling for beneficial use certain liquid or semiliquid waste from drilling
TX SB 514	Installation, maintenance, operation, and relocation of saltwater pipeline facilities
VA HB 710	Relates to ownership rights of natural gas or coal bed methane

In 2013, there were also four pieces of legislation that dealt specifically with fracking fluid disclosure. Arkansas HB 2001 required an operator intending to conduct shale operations to provide a single enhanced written notice to be given to the surface owner that describes the proposed shale operations and the location of the proposed well and the pad location with a statement that the operator has a pending or approved drilling permit for the proposed shale operations on the surface owner's property. Illinois SB 1715 created the Hydraulic Fracturing Regulatory Act, which prohibited high volume horizontal hydraulic fracturing operations performed without a permit; provided requirements for permits, insurance, well construction and drilling, disclosures, water quality monitoring, and

related matters; created the Mines and Minerals Regulatory Fund; provided for recommendations relating to the location of gas or oil and process materials resources; and imposed a tax on the severance of oil or gas produced through hydraulic fracturing. Illinois SB 2155 added to the aforementioned Hydraulic Fracturing Regulatory Act by mandating that the Department of Natural Resources must forward necessary information to each Chief County Assessment Officer for the administration and application of ad valorem real property taxes at the county level; and amended the Property Tax Extension Limitation Law in the Property Tax Code, provided that new property includes any increase in assessed value due to oil or gas production that was not produced in or accounted for during the previous levy year. Finally, Rhode Island SB 725 gave the Commissioner of Energy Resources the authority to collect price, inventory and product delivery dates- including amounts and types of product sold; material regarding petroleum products, natural gas and other fuels available for supply within the state; and any other information that is necessary, provided that the information collected will not be public information unless prepared for that purpose and may be shared with energy offices of other states provided they have suitable safeguards against public dissemination. Further analysis will determine the relative strength of each bill as well as the intent with regard to environmental protection.

Bill	Legislature	Classification	External Factors
Arkansas HB 2001	Mixed	Semi	Mixed legislature, little

			media attention
Illinois SB 1715	Democratic	Stringent	Criticism from interest groups; multi-year drafting process
Illinois SB 2155	Democratic	N/A	Part of above bill
Rhode Island SB 725	Democratic	Semi	Little media attention, deals with disclosure more broadly than just fracking

ARKANSAS HOUSE BILL 2001

Arkansas HB 2001 was first introduced to the Arkansas State House of Representatives by Representative Greg Leding (D-Fayetteville) on March 11, 2013. The House passed it upon a third reading Yea: 78, Nay: 1, Other: 21. The bill was then introduced in the Arkansas State Senate, where it was passed Yea: 34, Nay: 1, Other: 0 with one amendment. This version was remanded back to the House, where it passed Yea: 89, Nay: 0, Other: 11. The Governor then signed the bill into law on April 16, 2013. The bill was written to take immediate effect. Democrats controlled the governor's seat while Republicans controlled the State House and State Senate. Control of the State House and State Senate switched control from Democrats to Republicans in 2012. Both bodies are currently held by narrow margins. Arkansas HB 2001 did not receive significant media attention. It was introduced as a single bill, not part of a larger package.

This bill includes various mechanisms for information disclosure. The rules of the commission require an enhanced written notice to be given to the surface property owner at least fourteen days by the operator before he proposes to begin shale operations on the surface owner's property. This notice must contain a statement that the operator has a pending or approved drilling permit for the

proposed shale operations on the surface owner's property and that the permit shall be available for inspection by the surface owner on request by the surface owner. Furthermore, it must contain the name, address, telephone number, fax number, and electronic mailing address of the operator or the operator's agent and be sent by certified United States mail or delivered personally to the surface owner at the address of the surface owner stated in the public records of the county collector of the county in which the surface owner's property is located. This notice must describe the proposed shale operations and the location of the proposed well and the pad location, including the section, township, range, and plat of the pad location, if available. Apart from this requirement to give notice of an operator's plans, Arkansas HB 2001 does not compel any further action from hydraulic fracturing well operators.

This bill is different from the legislation passed in 2012 regarding disclosure in hydraulic fracturing operations. It does not address the technical aspects of hydraulic fracturing closely; there is no mention of fracking fluid, well depth or location, etc. Instead this bill focuses on compelling the well operator to give notice of his actions to surface property owners. There is no mention of further action on the part of the well operator nor is there much opportunity for protest from land owners. However, if notice is being given to landowners then the well operator has received previous approval from the state government. The bill does not address many of the environmental and community impacts that are inherent to hydraulic fracturing.

Arkansas HB 2001 can be considered a semi-stringent piece of legislation. It does address information disclosure surrounding hydraulic fracturing operations but it also leaves many issues untouched. The legislation mandates that well operators communicate with property owners who will be affected by their actions. However, it does not require the operator to give any other notice to begin, conduct, or complete shale operations on the surface owner's property. The operator must receive approval from the state, but after this he is free to continue without an explicit process for gaining approval from landowners. In this way, it is similar to the 2012 legislation that collects information but does not make further mention of publicizing the information collected (Indiana HB 1107 and Pennsylvania HB 1950). Arkansas HB 2001 "collects" information about proposed drilling operations and the state does go through a permitting process but it does not make the information public, nor are there provisions for citizens to gain access to the information.

After written notice of the operator's intent to begin shale operations is given the bill does not compel further action. The bill also does not create an official opportunity for dialogue between operators and landowners. Thus, the bill makes an attempt to regulate hydraulic fracturing but the lack of opportunities for landowners to do anything with the information they receive decreases this bill's stringency in regulating or limiting hydraulic fracturing. HB 2001 should be considered semi-stringent.

ILLINOIS SENATE BILLS 1715 and 2155

Illinois SB 1715 was first introduced in the Illinois State Senate on February 15, 2013 by Senator Michael Frerichs (D- Champaign). The Senate passed it upon a third reading Yea: 51, Nay: 0, Other: 8. The bill was then introduced in the State House of Representatives, where it was passed upon a third reading Yea: 108, Nay: 9, Other: 1 on May 30, 2013. The amended bill was referred back to the State Senate, where the new version passed Yea: 52, Nay: 3, Other: 4 on May 30, 2013. The Governor then signed the bill into law on June 17, 2013. The bill was written to take immediate effect. Democrats controlled the State House, State Senate, and Governor's seat at the time that SB 1715 was introduced and passed. SB 1715 received significant media attention during its introduction. It was not a part of a larger package of bills, though a second bill was introduced in tandem and can be considered an addendum to SB 1715.

Illinois SB 2155 was also first introduced in the Illinois State Senate on February 15, 2013 by Senator Michael Frerichs (D- Champaign). The Senate passed it upon a third reading Yea: 52, Nay: 0, Other: 7. The bill was then introduced in the State House of Representatives, where it was passed upon a third reading Yea: 104, Nay: 13, Other: 1 on May 31, 2013. The amended bill was referred back to the State Senate, where the new version passed Yea: 59, Nay: 0, Other: 0 on May 31, 2013. The Governor then signed the bill into law on Jun 17, 2013. The bill was written to take immediate effect. Democrats controlled the State House, State Senate, and Governor's seat at the time that SB 2155 was introduced and passed.

Illinois SB 1715 includes many mechanisms for information disclosure. The bill is comprehensive and addresses various aspects of the hydraulic fracturing

process. It has provisions for comprehensive disclosure requirements both before and after fracking occurs, including the creation of master lists of the base fluids, additives and chemicals that may be used in fracking, which are to be posted on the Illinois Department of Natural Resource's (DNR) website. SB 1715 allows companies to request trade secret protection of any of the chemical information otherwise required to be disclosed. To pair with this, it also includes provisions to monitor which trade secrets are protected, that the public can challenge trade secret designations, and that health needs trump companies' right to protect chemical information.

The bill also requires fracking permit applicants to submit a water management plan describing the source of water to be used for fracking, the location where that water will be withdrawn, the anticipated volume and rate of each water withdrawal and the months when withdrawals will take place. After hydraulic fracturing has been completed, companies must report to the Illinois DNR the total water used in fracking and the locations from which the water was withdrawn. Notice of the permit application is published twice in a local newspaper and sent directly to owners of property near the proposed well site. Each permit application will be made available for public comment for 30 days. The bill makes provisions for anyone who may be adversely affected by the permit to request a public hearing. SB 1715 also provides that, in addition to the Attorney General and the State's Attorney of the county in which fracking is taking place, any adversely affected persons – including environmental groups – may sue fracking companies for violations of the law or the Department for failure to perform its duties under

the Act. Illinois SB 1715 differs from many other states that enacted disclosure legislation in its scope. The bill goes further than many in comprehensively addressing many aspects of the hydraulic fracturing process. It increases necessary disclosure at almost every step of the hydraulic fracturing process, from identifying potential drilling sites to the mandatory cleanup process after a well is finished.

In addition to disclosure-oriented provisions, SB 1715 also discussed many angles related to hydraulic fracturing operations. The bill prohibits open-air ponds for wastewater storage. It includes waste fluid management requirements and comprehensive water monitoring requirements. The bill also places the onus on fracking companies to prove that contamination of water sources near the well site was not caused by fracking. This does not take the form of public disclosure per say, but rather it assumes that hydraulic fracturing companies must prove to the DNR that they are not responsible for any environmental harms as a result of their work. It also includes setbacks from water sources and well construction standards. SB 1715 also discusses water management and wildlife protection; it mandates that applicants must describe methods they will use to minimize water withdrawals and adverse impact to aquatic life from those withdrawals. The bill's air quality requirements apply to both oil and gas wells and they apply during both the initial fracking process- well completions- and later in the production phase, whereas the federal rule only covers the initial fracking process. These standards exceed federal air quality requirements for oil and gas wells on both counts. SB 1715 also states that if a noticeable earthquake occurs which can be traced to the deep underground wells where fracking waste is injected, the DNR must adopt rules to monitor seismic

impacts and limit injection activity. This could become publicly disclosed information in the future, depending on how this rule is interpreted and enforced.

SB 1715 grants the DNR broad authority to administer and enforce the legislation, including authority to inspect fracking sites, collect data, require testing or sampling, examine records and logs, hold hearings, adopt rules, and take other actions as may be necessary to enforce the it. This is a systematic theme throughout the various provisions explicitly included in the legislation: the DNR is responsible for their implementation and upkeep and it has relatively free reign to carry out the intent of the legislation.

This bill is similar to the legislation passed in 2012 with regard to its regulation of the technical aspects of hydraulic fracturing. Illinois SB 1715 addresses almost every technical aspect of a hydraulic fracturing operation, from the initial drilling of the well and the materials used in its construction to the emissions inherent to the operation of a hydraulic fracturing well to the emergency response that may be necessary. However, there are also significant differences between the Illinois bills and those passed in 2012. HB 1715 goes further and addresses many of the environmental hazards that surround hydraulic fracturing, including water withdrawal and impact upon local wildlife. It also is one of the first bills to create a public comment process and a definitive measures for people to protest the location of potential hydraulic fracturing sites. Illinois SB 1715 also contains provisions to make information available to private citizens after it is collect4d by the government.

SB 2155 is unique among the legislation discussed because it is not a bill that can stand alone in regulating hydraulic fracturing. Rather, it was written with the express intent of adding on the regulation of the bill that made its way through the Illinois State Senate at the same time, SB 1715. It was intended to take effect only if the larger Hydraulic Fracturing Regulation Act passed in Illinois, and indeed language to this effect appears in the first sentence of the bill. It amends certain parts of the other bill, even as both were being debated upon the Senate and House floor.

SB 2155 does contain provisions related to disclosure within hydraulic fracturing operations. The bill amended the Hydraulic Fracturing Regulatory Act by providing that the Illinois Department of Natural Resources shall forward the necessary information to each Chief County Assessment Officer for the administration and application of ad valorem real property taxes at the county level. It also amended the Property Tax Extension Limitation Law in the Property Tax Code by providing that "new property" includes any increase in assessed value due to oil or gas production that was not produced in or accounted for during the previous levy year. SB 2155 addresses issues of disclosure related to county governments- it gives local government a larger regulatory role in overseeing potential hydraulic fracturing operations within its jurisdiction.

Illinois SB 1715 can be considered a stringent piece of legislation in its regulation of hydraulic fracturing. It provides for expansive measures that oversee the hydraulic fracturing industry and places the industry under the scrutiny of the Illinois State General Assembly and DNR. Furthermore, the bill provides for

measures to disclose information collected by the government to the public and it allows citizens to take action to prevent hydraulic fracturing operations near them. Citizens also have recourse under the law if companies violate its provisions or the State fails to properly enforce it. With this piece of legislation, the Illinois State government has created significant barriers to entry for hydraulic fracturing operations that will serve to scrutinize any potential new actors thoroughly. The bill also creates a separate database administered by the Illinois state government that will handle information that is disclosed under provisions of this law. This database will be easily accessible to the public. Many of the other provisions that give private citizens the authority to act against hydraulic fracturing operations rely on information from this source.

SB 2155 cannot be categorized as a separate piece of legislation. However, it is still appropriate to discuss the provisions it included pertaining to disclosure in hydraulic fracturing. It deals with less technical aspects of disclosure and it focuses more on human costs associated with hydraulic fracturing operations. It allows for local governments, who are often the experts on their given jurisdictions, to take a larger role in assessing the location of these operations. It is difficult, however, to consider whether SB 2155 is a stringent piece of legislation on its own. This bill was never intended to stand alone- rather it is an addition to the aforementioned SB 1715. The larger Illinois SB 1715 (the Hydraulic Fracturing Regulatory Act) is certainly stringent, but it is difficult to consider one of its parts on its own merit.

RHODE ISLAND SENATE BILL 725

Rhode Island SB 725 was first introduced on March 13, 2013 by State Senator V. Susan Sosnowski. The Senate passed it upon a second reading Yea: 71, Nay: 1, Other: 3. The bill was then introduced in the State House of Representatives, where it was passed by a vote of concurrence on June 27, 2013. The Governor then signed the bill into law on July 15, 2013. The bill was written to take immediate effect. Democrats controlled the State House, State Senate, and Governor's seat at the time that SB 725 was introduced and passed. The Democratic governor was originally elected as an independent but he switched his affiliation. SB 725 was not a part of a larger package of bills.

Rhode Island SB 725 included several different disclosure provisions. The bill gave the Commissioner of Energy Resources the authority to collect price, inventory and product delivery dates- including amounts and types of product sold; material regarding petroleum products, natural gas and other fuels available for supply within the state; and any other information that is necessary. The bill specifies that the information collected will not be public unless explicitly prepared for that purpose. It does specify that the information may be shared with energy offices of other states provided they have suitable safeguards against public dissemination.

This bill is different from most of the legislation previously discussed because it deals only with the collection and dissemination of information. It makes no comment upon the technical aspects of hydraulic fracturing, such as well location and depth or fracking fluid composition. The bill also does not make any comment upon disclosure regarding community impact, such as mandatory public notices and

commentary or legal recourse against hydraulic fracturing industry actors. Private citizens could theoretically use the information that is collected under the provisions of the bill to accomplish these goals. However, SB 725 does not have explicit provisions in place to make the information it collects public and there is some ambiguity in how much access private citizens would be granted upon requesting information.

Rhode Island SB 725 can be considered semi-stringent legislation. It does make provisions for the disclosure of information regarding hydraulic fracturing. However, there is no mention made of what will be done with the information beyond keeping a government record. This information will be made publicly available to some extent but it remains to be seen whether it will be more accessible than the FracFocus database. The bill does make some mention of information that can be made public if it is specifically prepared for that purpose but it is difficult to say what this purpose may be or how often this may apply. Furthermore, it seems likely that the state would be somewhat reluctant to share information publicly because the bill makes explicit mention of the fact that information will only be shared with other state governments if they take suitable safeguards against public dissemination. The lack of explicit conversation regarding publicizing the information indicates that the bill is semi-stringent.

CONCLUSIONS REGARDING PARTISAN PREFERENCES

This study anticipated that Democrats would be more likely to support environmental protections than Republicans. It went on to define disclosure as a policy tool that led to more protection with regard to hydraulic fracturing. This

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definition was accepted with the caveat that disclosure only leads to increased environmental protections when it is paired with other provisions that make the information public or otherwise empower private citizens to act in response to disclosed information. In the context of this study, Democratic governments were assumed to have a preference for stringent legislation, Republican governments for non-stringent legislation, and split-party governments for semi-stringent legislation with regard to hydraulic fracturing.

The study found that both Republican and Democratic governments departed from expected preferences more frequently than they adhered to them. There was only one case of a mixed-party government and it did adhere to its expected preference. However, no conclusions should be drawn regarding preferences of mixed-party governments more broadly because the sample size is only one. These departures from expected preferences by Republicans and Democrats do not indicate that the expected preferences are incorrect but rather that other factors besides partisanship play a larger role.

can be explained through ~~Through the course of analysis, pressure from extra-governmental factors was hypothesized to play a large role in the actual preferences that governments exhibited.~~ The conversation around hydraulic fracturing is certainly divided, both on a national and state level. Regardless of their partisan affiliation, all governments face pressure from extra-governmental groups.

Democratic Governments overnments opposed to hydraulic fracturing would primarily be subjected to pressures from interest groups and public opinion advocating for increased hydraulic fracturing. Republican ~~Similarly, governments~~

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that support hydraulic fracturing would primarily face similar pressures from groups opposed to hydraulic fracturing. Mixed-party ~~Undecided~~ governments would face balanced pressure from all sides in the hydraulic fracturing debate. The cases discussed demonstrate that extra-governmental factors such as interest groups or unique geography can influence legislative outcomes. All governments are subjected to external pressures and with an issue where public opinion is divided these pressures can come from every direction. Thus, the departures by both Republican and Democratic governments from expected preferences regarding stringency of legislation can be attributed ~~partially explained to by~~ pressure from exogenous factors advocating for the opposition position from what each party would be expected to support.

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Republican governments passed either semi-stringent or stringent legislation. It has been established that non-stringent legislation is not likely when discussing disclosure mechanisms in hydraulic fracturing. This does not immediately explain why Republican governments would then pass any legislation pertaining to disclosure in hydraulic fracturing. if legislation that is most in line with their ideological preferences is unlikely to occur for other reasons. These actions cannot simply be explained by expected preferences. Instead, external pressures from interest groups and public opinion are more likely to explain the legislation that Republican governments enacted. A combination of media attention and specific occurrences in given states has resulted in pressure on government to pass regulations for the hydraulic fracturing industry. Though a Republican government may not be endogenously inclined to enact this type of legislation, sufficient external

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pressure can sway its opinion. The passage of semi-stringent legislation can be interpreted as a concession to public opinion while remaining as close as possible to Republican preferences. The stringent bill passed by a Republican government represents a unique case where a natural disaster linked to hydraulic fracturing precipitously turned public opinion against hydraulic fracturing, which resulted in stringent legislation that empowers private citizens to take action against hydraulic fracturing.

Democratic governments also departed from expected preferences. Based upon their ideology, these governments tend to support higher levels of government regulation and thus could be predicted to support stringent legislation. Stringent legislation is expected to include mandatory disclosure mechanisms and provisions to make disclosed information public and allow private citizens to act upon the information in some capacity. The Democratic governments that passed legislation on this topic did pass some stringent legislation but a larger proportion was semi-stringent. This can be explained partially by pressure from interest groups advocating against increased regulation. It can also be explained partially by a lack of familiarity with hydraulic fracturing in a state. If there was not much conversation on the issue there was likely less pressure pushing for stringent regulation of hydraulic fracturing. The departure from expected preferences may also be associated with the costs associated with large amounts of regulation inherent to stringent legislation. Stringent legislation requires the state to monitor industry actors to ensure they report information accurately and make that

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information publicly available. Individual governments may have decided they did not want this burden, regardless of their ideological preferences.

This study cannot make definitive conclusions regarding the reasoning behind legislation that was passed. It can note that in many cases the legislation departed from expected partisan preferences. Further, it can speculate that other forces play a large role in determining the legislation that is passed than does partisanship. Extra-governmental pressures, primarily from interest groups or naturally occurring events in each state played some part in influencing the legislation that was eventually passed. Since the enacted legislation does not align well with expected partisan preferences, it is fair to speculate that these extra-governmental factors play a larger role than partisan preferences in determining legislative outcomes.

DISCUSSION OF EXOGENOUS FACTORS' IMPACT ON LEGISLATION

It has been established that partisan preferences cannot fully account for the legislative outcomes in this study. Thus, there must be other factors at play that can help to explain the observed departures from partisan preferences. There is not a standardized set of factors that equally affect each case in the study. Rather, each case presents unique factors apart from partisan preferences that have had some effect on the outcome of legislation. This study will not pinpoint their exact effect but rather discuss the possible impact that difference extra-governmental factors unique to each case had on the legislative process.

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2012 LEGISLATION

Bill	Legislature	Classification	External Factors
Indiana HB 1107	Republican	Semi	Criticism from environmental groups
Louisiana HB 957	Republican	Stringent	Natural disaster
Pennsylvania HB 1950	Republican	Semi	National-level attention, criticism from environmental groups

Legislation passed in 2012 pertaining to disclosure mechanisms that affect hydraulic fracturing was significant for a number of reasons. This was the start of action surrounding a larger national conversation regarding hydraulic fracturing that has continued to the present. Though many governmental and nongovernmental actors have discussed hydraulic fracturing for a number of years, 2012 marked the start of robust legislative action on the topic. This can be attributed to a complex interplay of governmental and nongovernmental actors that has both influenced public opinion and at times been guided by it. Each of the cases from 2012 was significantly impacted either in its creation, its implementation, or both by this conversation about hydraulic fracturing on both a state and national level.

INDIANA HOUSE BILL 1107

Indiana HB 1107 was a semi-stringent bill passed by a Republican government. The bill received criticism from some environmental groups because it did not go far enough in addressing concerns about hydraulic fracturing in the state. It has been compared to the earlier HB 1085, introduced by Representative Winfield Moses (D- Fort Wayne). Environmental groups lobbied for HB 1085 over HB 1107.

They proposed that HB 1085 was more stringent in its treatment of hydraulic fracturing and thus would provide more environmental protections. This bill serves as an example of an extra-governmental group influencing the legislative process. Its effect should be considered in this case as an example of a factor other than partisan preferences that should be considered when examining the entire landscape around a bill's progress through the legislature.

This study will only give full consideration to enacted bills. By extension, it will also not categorize legislation that was not enacted as stringent/non-stringent. It is impossible to fully control for the intentions behind legislation that is introduced but not enacted. Some bills may not have been intended seriously by their sponsors and thus should not be considered fully next to enacted legislation. However, HB 1085 in Indiana is particularly relevant to the discussion around HB 1107 because environmental groups explicitly held it up as a serious alternative to the enacted legislation. HB 1085 was given due consideration by the Indiana House of Representatives. In Indiana extra-governmental groups brought HB 1085 to the media's attention during the time that HB 1107 was making its way through the State Legislature. Even though HB 1085 was not ultimately enacted it was used as an attempt to influence the content of HB 1107, which was enacted.

~~Representative Moses'~~ HB 1085 assigns the task of regulating hydraulic fracturing to the Natural Resource Commission. An operator would be required to obtain approval for an environmental compliance plan that includes: (1) well

location and total depth; (2) a list of injection fluids and propping agents used in the hydraulic fracturing process; (3) the chemical constituents and additives used in, and wastes generated during, the hydraulic fracturing process; (4) a detailed geological analysis of the well and its surrounding area, including the rock type and the direction and magnitude of regional tectonic stresses; (5) the impacts of any pre-drilling or pre-alteration survey performed on the well with respect to the hydraulic fracturing process; and (6) an analysis of whether the proposed hydraulic fracturing process will pollute or otherwise endanger water or land in Indiana. It also contains a provision that requires the Commission to develop a process whereby an operator could be required to disclose a proprietary formula in the case of a medical emergency. HB 1085 makes provisions to publicize information collected under its purview and it also collects more information than HB 1107. HB 1085 offers more recourse to people living near proposed hydraulic fracturing sites because it makes provisions to grant public access to information. However, this bill did not make it out of committee when it was introduced.

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HB 1107 was introduced by a Republican and successfully made it through both Chambers and then received the governor's approval. HB 1085 was introduced by a Democrat and did not make it out of the House committee where it was first introduced. It is possible to attribute this pattern of success and failure respectively to the content of each bill. HB 1085 proposed that more information be collected about hydraulic fracturing and also that this information be made public. It may be the case that there was no support in Indiana in 2012 for these types of measures.

A bill that was proposed in committee but did not make it further in the legislative process may not be an accurate reflection of the entire party's views; it may be a personal project for the bill's sponsor. In this case, HB 1085 does not deal with district-specific issues, which lends credence to the theory that it was not merely a personal project for its sponsor. Furthermore, the media coverage of the bill characterized it as a Democrat-backed piece of legislation, which indicates it had the support of a reasonable portion of the party beyond the initial sponsor.

It is also necessary to consider whether politics played a role in the relative success of the two bills. Indiana's government is controlled entirely by Republicans so one must consider whether a bill introduced by a Republican would be received more favorably than one introduced by a Democrat. It is difficult to separate this question from the first, whether the Democrat-backed bill was simply too far to the

left for Indiana's legislators to support. The different reception that the two bills received leads to the conclusion that the party of the introductory legislator and the content of the bill are intimately connected. A bill introduced by legislators in the minority party are an accurate reflection of the state's public's views. However, there were also many environmental interest groups in Indiana that advocated for HB 1085 while both bills were under consideration in the State House so it seems that some portion of the population did support HB 1085.

This general principle is important to note in conjunction with the rise of partisan influence in past decades. There is an intimate connection between sharply drawn partisan lines and a minority-introduced bill's failure in the legislature. It may be the case that the minority legislator introduced a bill that is simply ideologically unattractive to the majority, thus it fails. However, it may also be the case that the bill fails explicitly because a member of the minority introduced it. It is difficult to separate these two intentions and they may in fact be present in tandem. In the case of Indiana HB 1085, it is likely that the bill was both ideologically objectionable due to its more stringent treatment of hydraulic fracturing and politically objectionable to the Republican minority because it was introduced by Democrats and supported by environmental interest groups, who are traditionally seen as Democrats' allies.

Indiana HB 1107 demonstrates the importance of extra-governmental groups in the trajectory of legislative action. This case shows that a dissatisfied lobby can make its opinion known throughout the state and can affect the reception of a bill. In this case, extra-governmental groups made their opinion known

throughout the legislative process by advocating for a competing bill to the one that was eventually passed. They were ultimately unsuccessful with HB 1085 but the conversation they started indicates dissatisfaction among some portion of Indiana's electorate and will likely ensure that hydraulic fracturing remains a topic of debate for the State Legislature.

LOUISIANA HOUSE BILL 957

Louisiana HB 957 was a stringent bill passed by a Republican government. As discussed with Indiana HB 1107, extra-governmental actors can play a large role in its eventual success or failure. Unlike the examples in Indiana, it does not always require existing problems with the legislation were not needed for nongovernmental actors to take public action. Louisiana HB 957 did not receive much attention from media or environmentalist groups. However, the state has been heavily focused on the issue of hydraulic fracturing since the beginning of August in 2012, due to a large-scale environmental disaster known as the sinkhole at Bayou Corne. This environmental disaster is another exogenous factor that undoubtedly played a role in shaping the legislation that the Louisiana government passed. Here, the Republican government deviated sharply from its expected preferences so factors other than partisanship must be considered.

Governor Bobby Jindal declared a state of emergency after the sinkhole first opened in the southwest corner of the state. There has been a constant statewide watch on this area for the past year and a half, though little remedial action has been taken. The presence of the sinkhole has been attributed to the many hydraulic fracturing wells throughout the state. The resultant seismic activity and the state's

unstable topography are thought to be the causes of the sinkhole. Groups that formed in opposition to hydraulic fracturing in Louisiana played a previously unexpectedly large role in lobbying for environmental protections against hydraulic fracturing operations in the state due to the increased media attention that these issues received.

The sinkhole is relevant to the conversation around Louisiana HB 957 due to the coincidence of its appearance and the bill's passage and later implementation. HB 957 made its way through the Louisiana state legislature while warnings about the potential impact of hydraulic fracturing on the Louisiana landscape were heard around the state. It is reasonable to speculate that the elevated statewide profile of hydraulic fracturing may have lent the bill media attention and helped with its passage in both chambers of the Louisiana General Assembly.

A Democrat in an all-Republican controlled state introduced this bill, yet it passed with high margins in both chambers and relatively quickly. The text of the bill can easily be interpreted as being in compliance with the expected Democratic preferences on this issue. However, there is also an open-ended clause that grants discretionary power to the Commissioner of Conservation. This ambiguity could also work in favor of a more stereotypically Republican position because the Commissioner may choose to take a very small role. Thus the bill appeals to both parties. It is possible that the large-scale environmental consequences that have been attributed to hydraulic fracturing in Louisiana have pushed public opinion further against hydraulic fracturing, regardless of which party voters identify with. If this is the case, it is to be expected that Louisiana Republicans would be more

likely to support legislation limiting the proliferation of hydraulic fracturing, or even removing existing outfits, than Republicans on a national level.

This case lends credence to the theory that partisan preferences over an issue play an important role but larger issues that are present in a state can result in deviation from expectations. This assertion does not contradict predictions about partisan preferences; specifically, it does not invalidate their influence over decisions that states make. Rather, this suggests that it is necessary to examine expected actions of Democrats and Republicans under normal circumstances and then consider whether unique factors exist that could result in deviation from predicted preferences of either party. In this case, the conversation around the impact of the natural disaster in Louisiana places partisan preferences within a larger hierarchy of factors that all influence legislative action.

PENNSYLVANIA HOUSE BILL 1950

Pennsylvania HB 1950 was a semi-stringent piece of legislation passed by a Republican government. This is another example of a bill whose reception statewide was impacted by interest groups that took a stance against it. This bill has received significant criticism from environmental organizations because it fails to acknowledge the statewide impacts from drilling. They argue that HB 1950 discriminates against non-drilling communities, which can be impacted by increased traffic and congestion, placement of pipelines and compressor stations, and changes in population and cost of living due to drilling. [Similarly to the Indiana case, organizing by environmental groups should be considered when examining the final legislative outcome. There was a departure from Republicans' expected](#)

preferences in this case, thus there must be some other factors at play that can help explain the bill that was passed.

These Environmental groups are unhappy that HB 1950 does not provide any compensation for communities that aren't directly on hydraulic fracturing sites. Interest groups posit that the bill creates an unfair environment wherein drilling communities can not only mitigate the negative impacts of drilling, but also enhance many other areas of the community while non-drilling communities are not offered any of these opportunities. They argue that the information disclosed through provisions in HB 1950 empowers drilling communities to act in response to harms from hydraulic fracturing opportunities but non-drilling communities that also experience negative effects do not have the same ability. Many groups point to Arkansas, Colorado, Louisiana, Texas, West Virginia, and Wyoming, all of which have implemented taxes or fees around similar issues of environmental harms that benefit all of their residents either through education, community programs, or tax reductions- not just those who live in communities directly impacted by hydraulic fracturing.

Pennsylvania HB 1950 was an extremely high profile piece of legislation that faced intense oversight by extra-governmental groups at every step of the legislative process. This was due largely to the extensive conversation that was going on in Pennsylvania around hydraulic fracturing at the time, which continues to the present day. This bill received disproportionate national media attention compared to the average amount for state regulations, which is evident in the number of groups outside Pennsylvania that took an interest in it. The heightened scrutiny

resulted in more opposition to the bill than what would have occurred in a similar case with less media scrutiny. It follows that the opposition that HB 1950 faced uniquely affected its language and progress through the legislature.

Pennsylvania HB 1950 provides interesting insight into the intersection of partisanship and politically influential extra-governmental factors. It is difficult to separate the effect of national media attention from that of a highly partisan debate within the state but undoubtedly both play a crucial role. Pennsylvania is the center of a larger national debate on hydraulic fracturing, which results in stronger pressure for legislators to take sides on the issue. It has also provided ample material to fuel interest groups that advocate against expanding the hydraulic fracturing industry in the state. The Republican-controlled government can be considered to be largely at odds with the environmental groups in Pennsylvania. Thus, these two groups hold rather strong, diametrically opposed opinions that the government attempted to resolve with a semi-stringent bill that incorporates some points from both sides.

It is debatable whether this bill fully addressed the concerns of both sides. Many environmental groups in Pennsylvania contend that their input was ignored throughout the bill's drafting. They want a major overhaul of the legislation that takes a firmer stance against hydraulic fracturing. The initial bill was passed entirely along party lines, with only Republicans voting in favor. The Republican majority attempted to placate its minority counterpart and interest groups from the other side but it did not succeed in addressing their concerns. Republicans' expected preferences would be toward less regulation of the hydraulic fracturing industry

and it is possible to interpret the regulations in HB 1950 as a practical concession to the necessities of political compromise with the Democratic minority, whose preferences are toward more stringent regulations. Pennsylvania also occupies a unique place in the national debate on hydraulic fracturing due to its massive deposits of natural gas. This led to stronger opinions with regards to Pennsylvania's future on both sides of the hydraulic fracturing debate and almost certainly impacted the reception that HB 1950 received on both sides of the aisle.

Further, HB 1950 has become a major talking point in the 2014 election; every Democratic candidate for governor has mentioned plans to significantly amend the existing legislation. The Pennsylvania Supreme Court overturned much of the bill on the grounds that it violates portions of the state constitution that discuss natural resource management. The conversation around hydraulic fracturing in Pennsylvania will continue into the next electoral cycle, likely centered on either overhauling HB 1950 or writing entirely new and potentially more stringent legislation.

LEGISLATIVE TRENDS IN 2012

Republican-controlled governments passed all of the bills that pertain to disclosure regarding hydraulic fracturing in 2012. There were two bills labeled as semi-stringent and one labeled as stringent. Republican-controlled governments would be expected to pass non-stringent legislation, but because all the bills pertain specifically to disclosure mechanisms in hydraulic fracturing, expected preferences do not necessarily apply. This is a relatively niche topic that can be interpreted as a signal toward at least semi-stringent legislation. The cases mentioned support the

hypothesis that non-stringent legislation pertaining to disclosure is unlikely to occur.

In all the cases from 2012, there also exist mitigating factors that would have influenced public opinion toward more stringent legislation than would otherwise be expected from Republican-controlled governments. The Indiana case demonstrated strong opposition from environmental groups to an enacted bill. These groups advocated very publicly for an alternate bill during both bills' process through the Indiana legislature. They argued that the alternate bill's provisions regarding publicizing information were vital in giving citizens a voice in the future of the hydraulic fracturing industry in the state. It is possible that the Republican majority responded to this pressure by passing legislation that was not in line with their expected preferences but rather closer to the median opinion.

A similar situation occurred with environmental interest groups in Pennsylvania regarding HB 1950, a semi-stringent bill passed by a Republican government. There was strong public opinion against fracking that translated to criticism of HB 1950 because it did not sufficiently reduce harms from hydraulic fracturing for the entire state. This case also presents strong negative response from citizens toward hydraulic fracturing. This is similar to the pressure exerted by interest groups in the sense that it is from a nongovernment actor but it can also be considered a less organized, more organic force of opposition. When comparing the case in Indiana to that in Pennsylvania it is interesting to consider the effect that opposition from interest groups versus citizens has in affecting legislation. Interest groups are frequently highly organized lobbies that can push forcefully on a single

piece of legislation and they can be considered efficient in accomplishing their goals. In contrast, citizen opposition is usually less well defined but it can have proportionately more power if it manages to organize itself because it plays into politicians' fears around reelection. Pennsylvania presented both these pressures to Republican elected officials. The Republican-controlled government may have passed semi-stringent legislation in response to pressures from the Democratic minority and environmental interest groups.

Louisiana HB 957 was a stringent bill passed by a Republican government and it also does not align with expected preferences for Republican elected officials. In this case, the unexpectedly stringent legislation can also be attributed to extra-governmental pressures that swayed public opinion. The state experienced a severe natural disaster that was attributed to hydraulic fracturing. This swayed citizens' opinions firmly against hydraulic fracturing, which would translate to support for stringent legislation. They in turn made this opinion known to Louisiana elected officials. Strong pressure from citizens helps explain the departure from expected preferences among Republican politicians.

All the cases from 2012 demonstrate a departure from expected partisan preferences. Thus, it is fair to assume that a combination of other factors is responsible for the legislation that each state government passed. This study will not make definitive statements about the causes behind each bill's passage. However, it will note that factors other than partisan preference appear to play a large role in shaping legislation.

2013 LEGISLATION

Bill	Legislature	Classification	External Factors
Arkansas HB 2001	Mixed	Semi	Mixed legislature, little media attention
Illinois SB 1715	Democratic	Stringent	Attention from environmental groups; multi-year planning
Illinois SB 2155	Democratic	N/A	Part of above bill
Rhode Island SB 725	Democratic	Semi	Little media attention, deals with disclosure more broadly than just fracking

Legislation passed in 2013 pertaining to disclosure mechanisms in hydraulic fracturing was significant for a number of reasons. The legislation continued a national conversation around hydraulic fracturing and resulted in markedly more skeptical treatment of the hydraulic fracturing industry by government and media sources. The added information resulted in national and state-level media treating hydraulic fracturing in a more nuanced way, with stronger positive and negative reactions to the issue. That is to say proponents of hydraulic fracturing sought to expand more aggressively while opponents sought greater environmental protections. Similarly to legislation from the previous year, patterns in 2013 legislation can be explained by a complex interplay of governmental and nongovernmental actors that have both influenced public opinion and at times been guided by it. Each of the cases from 2013 was significantly impacted either in its creation, its implementation, or both by the conversation about hydraulic fracturing on both a state and national level. Similarly to the cases from 2012, there were several departures from expected partisan preferences in 2013. The following exogenous factors should be considered as partial influences on the final legislation that was passed in each state.

ARKANSAS HOUSE BILL 2001

Arkansas HB 2001 was a semi-stringent bill that is unique because it comes from a mixed party government. A Democrat held the governor's seat while Republicans held both houses of the state's legislature. The case was further complicated by the narrow margin by which Republicans won the Arkansas House of Representatives. In 2012 control of the State House switched from 54-46 (D-R) to 48-51 (D-R). When one considers expected legislative behaviors from split governments, especially ones with a narrow margin for the majority, legislation that is very close to the median opinion on an issue could be expected. In this case, there is no clear national or Arkansas state-level consensus around hydraulic fracturing and thus it could be expected that a bill would be passed that does not clearly fall on either side of the issue. Arkansas HB 2001 does cede some ground to opponents of hydraulic fracturing who call for a more transparent process. It also allows for hydraulic fracturing operations to proceed with little opportunity for pushback from landowners. The intent is veiled, which could be considered an intentional product of the mixed party government that produced the legislation. The ambiguity allowed the legislature to pass a bill that was acceptable to all camps.

It is inaccurate to characterize all semi-stringent bills as a product of a divided government. Many states have governments controlled by one party and yet they pass semi-stringent legislation as defined in this study. It is necessary to examine the larger context in which legislation is passed. Often there are other strong voices from interest groups, other government agencies, etc. that can influence legislation. It is more accurate to ascribe semi-stringent legislation around

disclosure in hydraulic fracturing as a product of a state that has divided opinions on the issue. Though there may be a consensus among elected officials, the influence of public opinion cannot be dismissed when considering legislative outcomes, especially ones that would not normally follow from a state government's partisan composition.

In the case of Arkansas HB 2001 the mixed party government may certainly be a factor in the semi-stringent bill that the state legislature produced. The lack of a strong partisan majority within the legislature lends credence to this interpretation of events. It is fair to assume that the close margins by which Republicans hold the State House and Senate, coupled with the Democratic governor, contributed to the middle of the road bill that Arkansas enacted.

However, the semi-stringent bill may also be the result of extra-governmental voices that steered the debate. The state saw robust organizing around the issue of hydraulic fracturing in 2011-2012. Interest groups rallied against hydraulic fracturing in Arkansas after several wells exploded around the state, sending petition signatures to the State Legislature asking for a cessation to hydraulic fracturing. This in turn led to a statewide conversation centered on the future of the hydraulic fracturing industry in Arkansas. There was no single answer that came from this discussion. This may have given legislators the impression that no single opinion prevailed among voters. Thus, a bill that appealed to both camps would have been an attractive option to Arkansas state legislators. A bill classified as semi-stringent would be the most logical way to accomplish this goal because it

addresses disclosure to some extent but it does not curtail the industry as heavily as a stringent bill would.

In the case of Arkansas HB 2001 there is ~~some compelling~~ evidence that suggests the role of a mixed party government was stronger than that of interest groups. For the entire time that a mixed party government was in control in Arkansas it exerted the same influence over legislation that it passed; that is to say it was a constant influence over the entire time period that this study considered. In contrast, interest groups' influence changed with time. Interest groups usually organize around key events and then their influence wanes over time until another issue emerges. In Arkansas, groups against hydraulic fracturing organized in 2012 in response to several accidents but this was not a sustainable infrastructure. Thus, their ability to influence legislation that was passed over a year later seems questionable. Legislators may have recalled the message of extra-governmental groups but ~~it is likely that~~ the desire to reach a consensus ~~may have~~ superseded such concerns. Although this case did adhere to expected partisan preferences it is important to consider different factors in assessing the legislative process for each bill included in this study.

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ILLINOIS SENATE BILLS 1715 and 2155

Illinois SB 1715 was a stringent piece of legislation passed by a Democratic government. This bill demonstrates the effect that timely action from extra-governmental groups can have upon the public reception that an enacted bill receives. Immediately after it was enacted, SB 1715 was praised for its strict environmental protection standards. However, after the draft rules were released many environmental groups criticized the bill because it did not sufficiently provide public access to information, and by extension it did not do enough for environmental protection. The bill was also the culmination of a multi-year process in the state that brought together stakeholders from both parties, industry, and environmental interest groups. There was support for the bill from this diverse coalition throughout the duration of the legislative process but environmental groups later changed their views. Their opposition to the final version of draft rules ultimately changed the way that the bill was received in Illinois.

Illinois SB 2155 was passed by at the same time as SB 1715, by the same Democratic government. It is unique among the legislation discussed because it was not intended to stand alone. Rather, it should be considered an addendum to Illinois SB 1715. SB 2155 addresses disclosure in hydraulic fracturing but it amends existing Illinois codes rather than proposing entirely new regulations. It should be treated as a part of the SB 1715 “package” of legislation, thus it will not receive a separate stringency rating. It received much less media attention than its larger counterpart, thus the effect of extra-governmental groups is difficult to isolate. In this case it is more appropriate to assess the overall climate surrounding hydraulic fracturing at the time in Illinois.

Illinois SB 1715 was an extremely high profile piece of legislation that faced intense oversight by extra-governmental groups at every step of the legislative process. This was due in part to the extensive conversation that was going on in Illinois around hydraulic fracturing at the time, which continues to the present day. This bill also faced extremely high scrutiny due to the time at which it was introduced. A national conversation about hydraulic fracturing had been going on for some time and this added to the collective consciousness of the issue. The Illinois bill is not unique in this regard, but rather each bill from 2013 was subjected to more scrutiny compared to what could have been expected in past years. The Illinois bill faced higher scrutiny due to all the attention that hydraulic fracturing had received in that state. As time goes on it is likely that legislation pertaining to hydraulic fracturing will continue to garner high levels of press coverage. Thus it is somewhat misleading to say that Illinois SB 1715 received unusually high scrutiny. Instead, it is more likely that the “heightened” level of scrutiny for this type of legislation will soon become the norm.

There was significant attention around hydraulic fracturing at the time that SB 1715 and 2155 were being drafted. SB 1715 and its counterpart in the State House, HB 2615, were the culmination of a long conversation around hydraulic fracturing in Illinois, which also included SB 2155. The primary House and Senate sponsors of these bills worked to create a diverse coalition of industry experts, environmental groups, and state and local government officials to support their bills. This resulted in support from many different sides that allowed all three bills to pass with high margins. The multi-year stakeholder buy-in that legislators

created ensured that the legislation itself would have robust support. This is interesting to consider in conjunction with the loss of goodwill that followed the proposed DNR rules. Both cases demonstrate the importance of extra-governmental actors in affecting legislators' actions. It is evident that under certain conditions these groups can sway elected officials from acting according to their expected preferences.

SB 1715 was the result of action by legislators on both sides of the aisle and from different branches of government. Both the legislature and the governor had a role in advocating for the legislation. The bill brought together politicians on a rather divisive issue. This is notable because Illinois has a reputation for extreme partisanship in its government. The focus of the legislation certainly played a role in this; hydraulic fracturing was and continues to be a popular topic in the state and around the country, so it was likely at the front of politicians' minds. It is also necessary to examine the lengthy process that led to the enactment of SB 1715. Various actors in Illinois discussed hydraulic fracturing legislation for several years prior to its enactment. This drawn out conversation allowed input from industry, environmental groups, and members of the executive and legislative branches. The bill covered more topics related to hydraulic fracturing due to the range of opinions that helped shape it.

SB 2155 was likely introduced separately because the original text of the bill dealt with the existing Illinois Metropolitan Water Reclamation District Act. SB 2155 provided that settlements and demands, including associated attorney's fees and costs, together with claims for deprivation of any constitutional or statutory right,

were added to the list of costs which may not be included in the district's annual tax levy. As it was originally written, this bill did not deal with hydraulic fracturing. Instead, it was the Illinois State House that added an amendment to the Hydraulic Fracturing Regulatory Act that stated the Illinois Department of Natural Resources must forward the necessary information regarding hydraulic fracturing to each Chief County Assessment Officer. This amendment also changed the Property Tax Extension Limitation Law in the Property Tax Code, stating that "new property" includes any increase in assessed value due to oil or gas production that was not produced in or accounted for during the previous levy year. These two changes both deal with existing Illinois legislation and thus it was perhaps more politically expedient to add them to a separate piece of legislation rather than the already cumbersome SB 1715.

Illinois SB 2155 did not receive significant media attention, although hydraulic fracturing was a popular topic in the state at the time of its implementation. This oversight can be attributed to the attention given to the better-known SB 1715, which eventually became the Hydraulic Fracturing Regulatory Act. SB 2155 was not targeted by extra-governmental groups, nor was it explicitly part of the multi-year coalition building processes around hydraulic fracturing in Illinois. This lends credence to the idea that it was always intended as an addition to the larger SB 1715. It also makes it difficult to anticipate preferences over the legislation. In this case it is most accurate to defer to the influences over behavior that affected SB 1715.

Both bills from Illinois demonstrate the importance of considering multiple factors that may have influenced legislative outcomes. This case demonstrates consistency with expected partisan preferences but there is evidence that exogenous factors also played a role the legislation that was eventually passed. This study will not weigh different factors that affect legislative outcomes but rather note that multiple elements played a role.

RHODE ISLAND SENATE BILL 725

Rhode Island SB 725 was a semi-stringent bill enacted by a Democratic government. It differs from previously discussion legislation because did not receive significant media attention during its drafting or after its implementation. Thus it is likely that another explanation exists for its deviation from expected partisan preferences. The bill deals broadly with disclosure, rather than only addressing disclosure mechanisms that affect the hydraulic fracturing industry. This general focus likely contributed both to the lack of media attention and the departure from expected Democratic preferences that SB 725 demonstrated.

Though hydraulic fracturing has captured a great deal of national attention, Rhode Island SB 725 was not widely mentioned. This ~~is likely due to two~~ can be attributed to several factors. First, the bill does not deal exclusively with hydraulic fracturing. The information requirements in SB 725 address both the oil and gas industries but there is nothing that ties this bill specifically to the national conversation around hydraulic fracturing. The bill may have also received less national attention because it did not deal with disclosure relating specifically to hydraulic fracturing. SB 725 calls for the Commissioner of Energy Resources to

collect information about the industry but it does not address any of the unique technical or social aspects of disclosure pertaining to hydraulic fracturing. Unlike some of the more stringent disclosure requirements in other states, the Rhode Island bill did not explicitly call for specific information to be shared. The general nature of the bill likely contributed to the low level of scrutiny it was subjected to.

In this case, there is little evidence to suggest that extra-governmental groups are responsible for the deviation from expected preferences for the Democratic government in Rhode Island. Instead, it seems likely that the unspecific language in the bill led to the interpretation of its regulation of hydraulic fracturing as only semi-stringent. Although it does address some issues of information disclosure it does not explicitly seek to limit the proliferation of the hydraulic fracturing industry. This could be complicated by the general lack of activity around hydraulic fracturing in the state prior to 2014. Cases in Louisiana and Illinois demonstrate that governments generally shift to more stringent treatment of hydraulic fracturing over time, regardless of which party controls the government. This can be attributed to an increase in public knowledge of the topic and corresponding attention from various extra-governmental sources. Rhode Island may pass a more specific and more stringent bill in the future if the hydraulic fracturing industry expands in the state. [This bill also demonstrates a departure from expected partisan preferences. In this case, it is possible that the lack of familiarity with hydraulic fracturing in Rhode Island contributed to a more general bill that was not as stringent as could be expected from a Democratic government.](#)

LEGISLATIVE TRENDS IN 2013

Democrat-controlled governments passed all but one of the bills that pertain to disclosure regarding hydraulic fracturing in 2013. In this group there were two bills labeled as semi-stringent and one labeled as stringent. This is not the expected action from Democrat-controlled governments and in fact matches the classification of bills passed by Republican controlled governments. A mixed-party government passed the final piece of legislation, which was also semi-stringent. The lack of clear partisan preferences on this topic seems to indicate the influence of extra-governmental groups ~~takes precedence~~ is necessary to consider when examining the stringency of enacted legislation.

In all the cases pertaining to bills from Democratic governments that were semi-stringent there exist mitigating factors that affected their classification. Illinois SB 2155 was an addition to another piece of legislation that was not intended to be considered solely on its own merits. Though it is not stringent itself, its parent legislation is. Thus, the Democratic legislators that introduced both bills were likely less concerned with the explicit stringency of this smaller bill.

Illinois SB 1715 was a stringent piece of legislation that aligned with expected Democratic preferences. The state had robust activity from both public and private sectors around hydraulic fracturing, which culminated in a diverse coalition that supported this bill. However, extra-governmental groups later criticized the bill as insufficiently stringent due to the rules promulgated by the DNR based upon SB 1715. Thus, the bill itself is stringent but the actions of a separate government body have been linked to it and harmed its overall reception. This case

demonstrates that even when expected partisan preferences are observed it is still necessary to consider other factors that have an impact on the legislative process.

In the case of Rhode Island SB 725, the bill in question did not pertain only to disclosure in hydraulic fracturing. It addressed the oil and gas industries more broadly, likely because there has been little action around hydraulic fracturing in the state. It is possible that the Democratic government would pass a stringent bill in the future if the need arose.

The final bill from 2013, Arkansas HB 2001, was unique because it came from a mixed-party government. It was semi-stringent, which was in line with expected preferences from this government. The reason behind its level of stringency is less clear. There was certainly a lack of a strong partisan majority in the state, which exerted a steady pressure toward a median legislative outcome that was acceptable to both parties. There was also some organizing from interest groups in the state. Though these groups' main activity occurred before HB 2001 was under consideration, the residual impact of their lobbying may have had some effect on elected officials. However, the gap between the majority of extra-governmental groups' organizing in 2012 and the introduction and passage of HB 2001 in 2013 is indicative that the split-party government had a larger effect in the passage of a semi-stringent bill.

LEGISLATIVE TRENDS BETWEEN YEARS

This study did not examine in detail the causes behind shifts in legislative trends. It sought to examine the impact of partisanship on preferences regarding information disclosure in hydraulic fracturing. It did not find compelling evidence to support the claim that partisan preferences play a large role in legislative outcomes. Logically, there must be other factors that can account for legislative outcomes, particularly those that depart from expected partisan preferences. The study will speculate as to possible causes for these observed departures from expected preferences, establishing avenues for further research.

Republican governments enacted all the legislation pertaining to disclosure in hydraulic fracturing in 2012. There were only 3 bills total on the subject, two semi-stringent and one stringent. In contrast, Democratic governments introduced all the bills but one from 2013. A mixed-party government, an anomaly itself in this study, introduced the last bill from 2013. There was a similarly small sample size in 2013, with two semi-stringent bills and one stringent bill- though the stringent bill had a second bill that was considered an addendum.

It is possible that the shift from Republican governments to Democratic governments can be attributed to the larger shift within the national and state-level conversation about hydraulic fracturing. Over time, media coverage of hydraulic fracturing indicates that it has been regarded with increasing skepticism. There was more critical coverage of the industry and more support for environmental protections on this topic. An increasing familiarity with the process of hydraulic fracturing, including potential negative side effects, may have shifted public opinion toward more regulation of the hydraulic fracturing industry. This stance pairs more

closely with expected Democratic preferences over the issue, thus these governments may have been more inclined to take action on this issue in 2013. Similarly, Republicans were more likely to take action in 2012 when public opinion was more in line with their expected preferences against regulation. This is only one of many possible explanations for this observed shift. Further study would be prudent to determine the reason behind different governments addressing the issue of information disclosure in hydraulic fracturing legislation in the different years studied. -

There is a surprising similarity in types of bills between years. That is to say, both the 2012 and 2013 samples have one stringent bill and a number of semi-stringent bills. This seems to indicate that other forces beyond partisan preferences influenced the final bill. Specific instances are discussed for each case, but overall a discernable trend emerges. Interest groups, public opinion, natural phenomena, or a broad legislative focus impact legislative outcomes. Arguably, these various factors have a stronger effect than expected partisan preferences because there were more instances of legislation that did not match with expected preferences than those that did. This study cannot comment definitively on the relative impact of partisanship or exogenous factors but it does note that both had an affect on the legislation that was enacted.

A LACK OF NON-STRINGENT BILLS

None of the cases in this study were labeled as non-stringent. Upon first inspection, this could be considered an unexpected outcome. Republican governments passed three of the bills examined and their predicted preferences

seem to indicate that they would support and enact non-stringent legislation. This preference stems from their expected response to the high level of government oversight necessary for stringent legislation. They prefer low levels of government regulation and thus should be expected to prefer non-stringent legislation.

However, it is necessary to examine other factors when making the final determination of a given party's preferences over legislation. Upon further reflection, it is not entirely logical to expect non-stringent legislation when considering disclosure mechanisms in hydraulic fracturing. By their nature, disclosure mechanisms provide more information upon a given topic. When these mechanisms are applied to environmental issues they result in more information that can then be used to prevent certain actions that cause unacceptable levels of environmental harm. Disclosure mechanisms can also be paired with other provisions that make the disclosed information public or empower private citizens to act upon this information. Thus, disclosure mechanisms in environmental legislation, especially when paired with other provisions, are linked to environmental protection. Non-stringent legislation, which here is defined as legislation that does include reporting for industry apart from the existing FracFocus database or provisions to make information public, would not logically apply to bills that deal specifically with disclosure in hydraulic fracturing. In a sense, non-stringent bills do not significantly alter the status quo in a state with regard to information disclosure of hydraulic fracturing practices. The A non-stringent definition certainly fits for other bills that regulate hydraulic fracturing in different

ways but it is understandable why disclosure bills would not commonly be non-stringent.

CONCLUSIONS REGARDING EXOGENOUS FACTORS, CONCLUSION

This study anticipated that Democrats would be more likely to support environmental protections than Republicans. It went on to define disclosure as a policy tool that led to more protection with regard to hydraulic fracturing. This definition was accepted with the caveat that disclosure only leads to increased environmental protections when it is paired with other provisions that make the information public or otherwise empower private citizens to act in response to disclosed information. In the context of this study, Democratic governments were assumed to have a preference for stringent legislation, Republican governments for non-stringent legislation, and split-party governments for semi-stringent legislation with regard to hydraulic fracturing.

The study found that both Republican and Democratic governments departed from expected preferences more frequently than they adhered to them.

There was only one case of a mixed-party government and it did adhere to its expected preference. These departures from expected preferences by Republicans and Democrats can be explained through pressure from extra-governmental factors.

The conversation around hydraulic fracturing is certainly divided, both on a national and state level. Democratic governments would primarily be subjected to pressures from interest groups and public opinion advocating for increased hydraulic fracturing. Republican governments would primarily face similar pressures from groups opposed to hydraulic fracturing. Mixed-party governments

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would face balanced pressure from all sides in the hydraulic fracturing debate. The cases discussed demonstrate that extra-governmental factors such as interest groups or unique geography can influence legislative outcomes. All governments are subjected to external pressures and with an issue where public opinion is divided these pressures can come from every direction. Thus, the departures by both Republican and Democratic governments from expected preferences regarding stringency of legislation can be attributed to pressure from exogenous factors advocating for the opposition position from what each party would be expected to support.

Republican governments passed either semi-stringent or stringent legislation. It has been established that non-stringent legislation is not likely when discussing disclosure mechanisms in hydraulic fracturing. This does not immediately explain why Republican governments would then pass any legislation pertaining to disclosure in hydraulic fracturing. These actions cannot simply be explained by expected preferences. Instead, external pressures from interest groups and public opinion are more likely to explain the legislation that Republican governments enacted. A combination of media attention and specific occurrences in given states has resulted in pressure on government to pass regulations for the hydraulic fracturing industry. Though a Republican government may not be endogenously inclined to enact this type of legislation, sufficient external pressure can sway its opinion. The passage of semi-stringent legislation can be interpreted as a concession to public opinion while remaining as close as possible to Republican preferences. The stringent bill passed by a Republican government represents a

unique case where a natural disaster linked to hydraulic fracturing precipitously turned public opinion against hydraulic fracturing, which resulted in stringent legislation that empowers private citizens to take action against hydraulic fracturing.

Democratic governments also departed from expected preferences. These governments tend to support higher levels of government regulation and thus could be predicted to support stringent legislation. Stringent legislation is expected to include mandatory disclosure mechanisms and provisions to make disclosed information public and allow private citizens to act upon the information in some capacity. The Democratic governments that passed legislation on this topic did pass some stringent legislation but a larger proportion was semi-stringent. This can be explained partially by pressure from interest groups advocating against increased regulation. It can also be explained partially by a lack of familiarity with hydraulic fracturing in a state. If there was not much conversation on the issue there was likely less pressure pushing for stringent regulation of hydraulic fracturing. The departure from expected preferences may also be associated with the costs associated with large amounts of regulation inherent to stringent legislation. Stringent legislation requires the state to monitor industry actors to ensure they report information accurately and make that information publicly available. Individual governments may have decided they did not want this burden, regardless of their ideological preferences.

This study sought to examine the effect of partisans preferences on legislation passed regarding information disclosure in hydraulic fracturing. It found that the enacted legislation examined departed from expected preferences more frequently than it adhered to them. This indicates that other factors must play a role in shaping the legislation that is passed. The study can only make definitive statements regarding the observed adherence or departure from hypothesized preferences based on partisan affiliation. However, because these predicted preferences were largely inconsistent with observed results, it is appropriate to theorize about other possible causes. These factors vary between states and represent promising directions for future study.

External factors that are unique to particular states ~~also~~ help explain departures from expected preferences. One state experienced a large natural disaster that was directly linked to hydraulic fracturing operations in the state. This ~~certainly could be expected to~~ pushed public opinion ~~further~~ against hydraulic fracturing ~~than could otherwise be expected~~. Several other states had smaller accidents that were also determined to be a result of hydraulic fracturing, which had a similar impact upon public opinion. These types of accidents push public opinion in one direction and the state's government can be expected follow this trend, which in many of the above cases ~~resulted helps explain in~~ legislation that did not match expected preferences.

Other states in the study ~~occupy unique positions due to~~ ~~were affected by~~ the intensity and duration of the conversation around hydraulic fracturing within their borders. Hydraulic fracturing has been a political topic throughout the country for

some years but, like any national issue, certain parts of the country have a more direct connection to the issue and thus they discuss it more frequently. This is particularly true of hydraulic fracturing because there are no national standards and the issue is left largely to the states to legislate. States that have larger deposits of natural gas have naturally led discussions of hydraulic fracturing. This has led to more knowledge of the topic and more comprehensive bills that address a larger variety of topics pertaining to hydraulic fracturing. The opposite is also true: states that have not had as much exposure to hydraulic fracturing, likely because they have smaller deposits of natural gas, passed bills that did not address hydraulic fracturing as specifically.

Broadly speaking, this study can conclude that factors other than ideology play a ~~large~~ role in determining a government's actions regarding disclosure in hydraulic fracturing legislation. Extra-governmental groups, geography, and negative incidents linked specifically to hydraulic fracturing can all push public opinion. During 2012-2013 it is possible to conclude that these exogenous factors played a ~~larger~~ role in determining the type of legislation that a government produced. ~~than did~~ These factors should be given particular consideration ~~ideology~~ because more bills were passed that did not match expected preferences than those that did. This offers compelling evidence that partisan preferences are not the sole determination, nor the most influential, in determining legislative outcomes.

This study chose to analyze the question of disclosure in 2012-2013 because this combination of focus area and time frame represents the future of the hydraulic fracturing debate in the US. The study took the most recent legislation available in

order to ensure up to date information. It chose to focus on disclosure because this has emerged in recent years as a new trend in environmental regulation.

The study relied on conclusions that can be drawn based upon theoretically expected preferences of Democrats and Republicans compared to their demonstrable legislative actions. If the study were repeated it would examine extra-governmental factors in each case more closely. Significant information could be added to the analysis through examination of floor statements made by individual legislators or public statements from interest groups regarding the bills under consideration. The study would also continue its analysis over time, adding bills from 2014 and years to come. Disclosure has been characterized as the direction that hydraulic fracturing legislation will take and increasing the analysis for upcoming years would address this claim.

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