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Resource Wealth and Women's Economic and Political Power in the U.S. States

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Abstract

Ross argues that oil wealth reduces women's economic and political power, but critics maintain that accounting for a community's attitudes toward gender equality makes the gendered resource curse disappear. This article disentangles the two perspectives by studying the effects of resource wealth on women's economic and political status in the U.S. states, where resource wealth varies significantly while cultural differences are comparatively small. Data between 1997 and 2012 reveal evidence of a gendered resource curse, consistent with Ross. I also update the theory of the gendered resource curse by showing, via a culture-augmented labor–leisure model of workforce participation, that far from being irrelevant when accounting for varying attitudes toward gender roles, resource wealth and those patriarchal attitudes combine to suppress even more women's economic and political influence. Data from the U.S. states support this expectation as well.

Keywords

political economy, gender, sexuality and politics, quality of democracy

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Political economists are in broad agreement that natural resource wealth brings with it a host of social ills, including slower and more volatile economic growth (Sachs & Warner, 1995; van de Ploeg and Poelhekke, 2009), autocratic rule (Ross, 2001; Weins, Poast, & Clark, 2014), and political corruption (Arezki & Bruckner, 2011; Bhattacharya & Hodler, 2010; Mahdavi, 2014)[1] To this already dispiriting list, Ross (2008) has recently proposed that resource wealth also undermines women's economic and political clout in Mideast and North African countries. This has proven to be a controversial claim, however. Ross's critics aver that the prevailing attitudes in a community toward gender equality—particularly the extent to which citizens subscribe to the more fundamentalist tenets of Islam—explain the status of women in the Arab world better than oil wealth does (Groh & Rotchschild, 2012; Norris, 2009, 2014). Indeed, they find that the explanatory power of resource wealth evaporates entirely once one controls for a country's beliefs pertaining to women's appropriate social roles.

This article contributes to the debate regarding the importance of resource wealth for women's economic and political status. Empirically, my strategy is to disentangle the resource curse and cultural perspectives by studying the effects of resource wealth using the 50 U.S. states as a laboratory. If there exists a distinct gendered resource curse, it should be readily apparent in a sample of the U.S. states because resource wealth varies significantly among them whereas their cultural differences are much truncated compared with what one observes in cross-national studies.[2]

Besides their more similar cultures, the states are a useful sample to study these issues because they differ markedly in their conduciveness to women playing active roles in economic and political life. Often this variation is puzzling. For instance, between 1997 and 2007, Georgia, North Carolina, and Louisiana all had similar average levels of per capita GDP: US$39,600 in North Carolina, US$40,500 in Georgia, and US$40,800 in Louisiana. Given this broad economic similarity, one might expect the states would also be similar with respect to the economic activity of their female populations (Goldin, 1995). Reinforcing this expectation is the fact that, as Rice and Coates (1995) find, southern states like these are more similar to each other than the rest of the country in terms of their attitudes toward the appropriate economic roles for women. Nevertheless, despite these similarities, female labor force participation averaged 62% in both Georgia and North Carolina but only 55% in Louisiana. Those values put Georgia and North Carolina at the sample's median, whereas Louisiana lagged far behind at the sample's 10th percentile. Furthermore, as an extensive literature on the relationship between women's economic participation and their political clout predicts (e.g., Andersen, 1975; Kenworthy & Malami, 1999; Schlozman, Burns, &

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Verba, 1994, 1999; Welch, 1985), these differences in economic activity seem to generate varying levels of political influence for women. To wit, in both Georgia's and North Carolina's state assemblies, about 17% of seats were occupied by women, on average, during this period.[3] Although this is not a very large seat share—it is about the sample's 30th percentile—women held even fewer seats in Louisiana—only 11%, a value representing the sample's 8th percentile.

Like Ross (2008), I maintain that these economic and political differences evidence a gendered natural resource curse. To develop this claim, I construct a standard model of the labor–leisure trade-off, the main implication of which is that resource abundance increases women's nonlabor income and thereby reduces their participation in the workforce.[4] I then draw from the abovementioned scholarship regarding women's economic participation and women's political influence to conclude that, because it reduces women's workforce participation, the ultimate, albeit indirect, consequence of resource wealth is to diminish women's political power.

Even though the cultural differences across the states are smaller than those between countries, the states still exhibit some attitudinal differences pertaining to gender equality (Rice & Coates, 1995). Accordingly, after developing the baseline labor–leisure model, I augment it to assess whether those differences subsume the effects of resource abundance, as critics of the gendered resource curse maintain. The augmented model reveals that, far from being irrelevant, resource wealth magnifies the negative effects of patriarchal attitudes. Specifically, a resource-induced increase in her nonlabor income makes a woman embedded in a community with inegalitarian attitudes toward gender roles—say, one where the prevailing attitudes are that a woman's proper social role is as a homemaker whereas ensuring the financial security of the family is men's work—*even less likely to enter the workforce.* This is because that nonlabor income enhances her ability to consume at a suitable level, although still playing the comparatively limited economic role that is consistent with her community's prevailing beliefs pertaining to gender.

The empirics support all of these propositions. State-level data between 1997 and 2012 reveal that natural resource wealth reduces female labor force participation and women's political influence. And consistent with the augmented model, subsequent analyses show that resource wealth magnifies the downward pressure inegalitarian attitudes concerning gender roles exert on women's economic and political clout. Specifically, I find that although states with traditional attitudes pertaining to gender roles tend be laggards in terms of female labor force participation, voter turnout among women, and the share of legislative seats that women occupy, those states where traditional

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attitudes toward gender roles prevail *and* that are rich in resources perform even worse on these dimensions than their similarly traditional but resource scarce counterparts. Given these results, I conclude, as Ross does, that women's economic and political influence derive in large part from the extent of natural resource wealth in an economy.

Economic Participation and Political Influence

Perhaps the most important determinant of the amount of political power women wield in a society is the extent of their participation in the workforce. Two complementary arguments tell us why this is so. First, work endows women with politically significant assets. Second, working women subvert the traditional values that often hinder them playing a more active role in public life.

Regarding the first mechanism, it is well established that entering the labor force endows women with skills and assets that make their political participation and recruitment more likely. Andersen (1975) and Schlozman et al. (1999) maintain that work tends to increase women's interest in and knowledge about politics. Often this happens when employers, industry associations, and unions inform employees of their political goals and mobilize them in the pursuit thereof. However, it also happens via less formal mechanisms, such as the casual conversations with colleagues regarding the political happenings of the day, or, more perversely, when women experience workplace discrimination and harassment.

Work also endows women with skills and resources that better allow them to act on their heightened psychological involvement with politics (Schlozman et al., 1994). For instance, work provides women with an independent source of income, which can improve a woman's ability to make contributions to candidates and interest groups she favors compared with women who are financially dependent on their husbands. In addition, women who work are more likely to develop civic skills such as public speaking and managerial skills that make them more attractive targets of parties' and political organizations' recruiting efforts.

Finally, work embeds women in networks that lower barriers to participation. Here again, unions and industry associations are particularly important as they can pool resources and coordinate mobilization efforts and strategies. Equally important though, is the fact that where no suitable organization already exists, working women will find it easier to create them because they are embedded in a network of employees with similar preferences and concerns.

A second and complementary literature contends that working women also undermine the traditional values that would otherwise prevent them

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from playing an active role in public life. For instance, Rindfuss, Brewster, and Kavee (1996) find that as more women enter the workforce, public attitudes regarding women's social roles liberalize. Fernández (2013) and Fogli and Veldkamp (2011) model this society-wide attitudinal change as occurring through demonstration effects wherein working women signal to the broader society that women have the skills to succeed outside of the home and that a woman who enters the workplace need not undermine her child's welfare as traditional values often maintain. Similarly, Fernández, Fogli, and Olivetti (2004) show that working women alter societal beliefs through the effects they have on their children. Specifically, they find that the sons of working mothers grow into men with more progressive views of women's social roles.

The combination of these individual-level and society-wide effects yields a robustly positive correlation between women's economic participation and their political influence. Andersen (1975) and Welch (1977) find that working women participate more in politics than women who do not work, whereas Schlozman et al. (1999) conclude that working full-time in high-level jobs is particularly important in closing the gender gap in political participation. Chhibber (2002) surveys women in India and finds that they are more politically knowledgeable and active when they can carve a space for themselves outside of the home, which they might do by entering the workforce. Meanwhile, cross-national studies find that another indicator of women's political power—the share of female legislators in the national assembly—is also increasing with the female labor force participation rate (Ross, 2008, Table 4), although the magnitude of the effect depends on the level of development (Matland, 1998), whether women are working in professional or managerial positions (Kenworthy & Malami, 1999), and the prevailing electoral institutions (Iversen & Rosenbluth, 2010).

We can also see a positive relationship between women's economic participation and their political influence when we interrogate data from the U.S. states. For instance, Figure 1 plots the average female voter turnout rate for state *i* between 1997 and 2012 against the state's average female labor force participation rate over the same period.[5] The positive trend is readily apparent. If Burnham's (1987) quip that "if you don't vote, you don't count" (p. 99) is right, then it is clear that those states where women do not participate in the workforce are also the states where women will exert less influence over the political process. Likewise, analogous to the cross-national literature cited above, Figure 2 plots the average share of seats women held in the lower chamber of state *i*'s legislature on the *Y*-axis and shows that this indicator of women's political power is also increasing with female labor force participation.

These stylized facts bring into stark relief the importance of economic participation for women's political influence in the United States. But why

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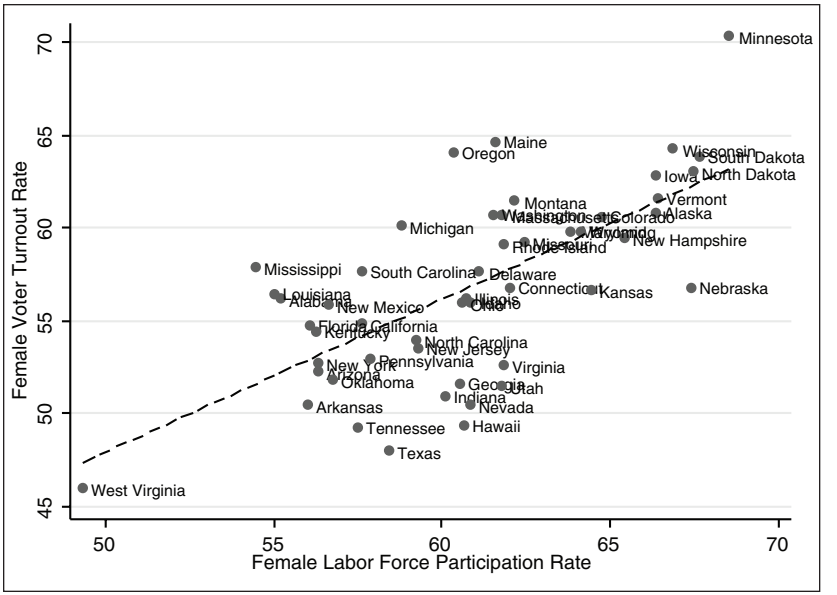

Figure 1. Female labor force participation and female voter turnout, 1997-2012.

are some environments so much more conducive to women entering the labor force than others are? What is it about Louisiana that causes female labor force participation rate there to be so much lower than in similarly rich Georgia and North Carolina? Below, I propose that this variation is a particular manifestation of the curse of natural resource abundance.

Theory

Ross's (2008) gendered resource curse hypothesis maintains, per the standard "Dutch Disease" argument, that resource wealth induces currency appreciation which, in turn, undermines export-oriented firms and industries. These processes constitute a *gendered* resource curse because in most developing countries, women tend to enter the workforce in export-oriented industries. Therefore, when resource wealth weakens the export sector, it harms disproportionately women's economic opportunities. And because their economic prospects shape the extent of their political influence, resource wealth also has particularly harmful effects for women's political power.

This is a compelling argument, but it cannot explain the state-level variation of interest in the present article because all 50 states use the same currency.

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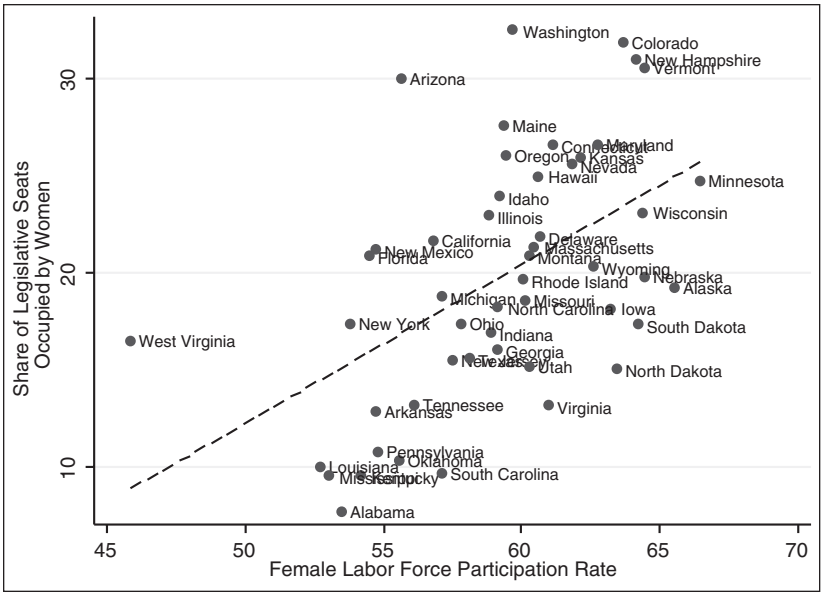

Figure 2. Female labor force participation and political influence, 1981-2012.

Notably, Ross (2008) also maintains that resource wealth can curse women in an alternative, and somewhat surprising, way, namely, by increasing their nonlabor income. To demonstrate, consider a standard model of workforce participation wherein individuals navigate a work-or-leisure trade-off. Welfare maximizing individuals are assumed to receive utility from nonmarket "leisure" activities and from consuming some basket of goods they have reason to desire. (Note that the term *leisure* is understood here as shorthand for any sort of utility-increasing activity that does not generate income, even if those activities, say those involved in child rearing, are not always particularly leisurely.) An individual's level of consumption, in turn, depends on his or her earned income (i.e., the number of hours dedicated to market labor multiplied by the hourly wage) and whatever nonlabor income they might obtain. Given this utility function and budget constraint, welfare maximization requires navigating a trade-off between working enough hours to consume a sufficient quantity of the basket of goods and not working so many hours that utility declines due to a lack of time devoted to the aforementioned leisure activities.

In this framework, when one's nonlabor income increases, one allocates fewer hours to market labor. Figure 3 illustrates. Let U_0 be individual i's indifference curve with regard to consumption and leisure. Line B_0 is the

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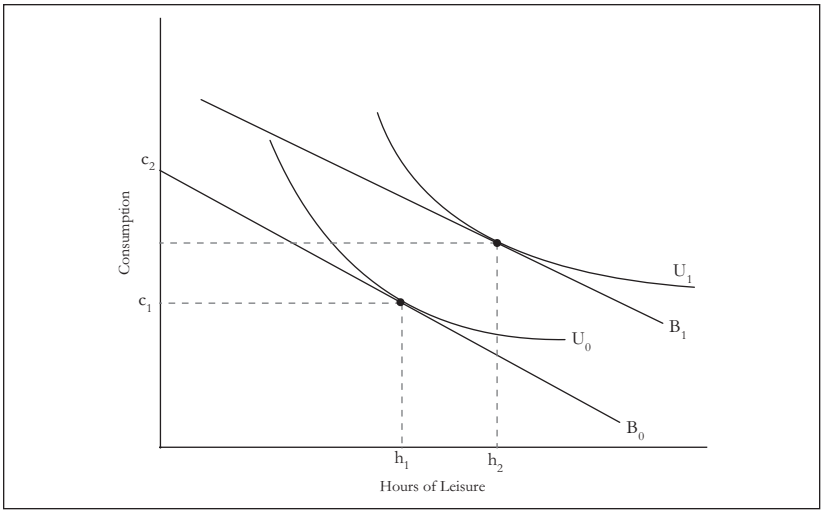

Figure 3. A labor–leisure trade-off.

budget constraint that one's consumption equal one's income from labor and one's nonlabor income. When the budget line is below the indifference curve, the individual can do better, either by working fewer hours and consuming less but having more time to dedicate to leisure activities or by dedicating fewer hours to leisure to consume more. The utility-maximizing position is the tangent of the indifference curve and the budget constraint. Therefore, assuming U_0 is the status quo indifference curve, the interior solution is that the individual dedicates h_1 hours to leisure and works enough to consume at the level of c_1.

Now suppose that the individual receives an increase in his or her nonlabor income. If leisure is a normal good, that increase amounts to an outward shift of the indifference curve from U_0 to U_1. On the new curve, the equilibrium is such that one consumes more while also dedicating more hours to leisure activities. Thus, increasing one's nonlabor income reduces the number of hours one substitutes market labor for leisure activities.

This general framework applies to men and women alike but it is particularly helpful in illuminating the gendered effects of a natural resource boom. Suppose global demand for a locally abundant resource is high. The commodity's high price encourages firms in the resource industry to boost production. To do so, they will hire more workers and extend employees' hours. This increased demand for labor increases wages for employees in the industry. Women do not typically work in the natural resource industry, and thus

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they are unlikely to benefit directly from the high global demand for the resource.[6] However, *their husbands often do* work in the industry. Accordingly, even though resource abundance need not have much of an effect on women's *earned* income, it increases their nonlabor income by increasing *household* income. And per Figure 3, the effect of this will be to reduce women's participation in the workforce.

One might reasonably counter that even in resource abundant economies, not all men will work in the resource sector and so the effect of resource abundance on the aggregate supply of female labor cannot be that large. To this critique, I have two responses. First, even if employment in the extraction industry is only a small share of total male employment, many men in the economy will work in industries that complement the resource sector, such as the transportation and refinery industries. Because these industries are so closely tied to the resource sector, when global demand for the locally abundant resource increases, production in these industries—and hence their demand for labor and the wages employers therein are willing to offer employees—rises as well. Second, even those men who work in industries altogether unrelated to the resource sector, say construction or manufacturing, will experience wage increases during a resource boom. Here, the issue is that when the resource sector increases its demand for labor, employers in other industries will be obliged to increase the wages they offer to their male employees to prevent them from exiting and joining the resource sector.

Recent experiences in North Dakota are illustrative. The most immediate effect of that state's recent oil boom has been rapidly rising earnings for workers in the predominantly male oil and gas sector. In 2004, average annual pay in that industry was US$55,731. By 2013, wages had doubled to US$111,427. That said, of the 120 jobs each new drilling rig produces, 36% are in the *transportation* industry because all that oil needs hauling away and the hydraulic fracturing extraction process typically requires about 2,000 truck trips of water just in the first year of the rig's operation.[7] Not surprisingly then, employment and wages in the male-dominated trucking industry are also rising rapidly in North Dakota. Between 2004 and 2013, wages in the industry doubled from US$33,000 to about US$66,000. Likewise, the oil boom has driven up wages in the construction industry. Housing shortages in the western part of the state, the expansion and creation of new roads and facilities in that same area, and employers trying to keep their employees from switching over to the resource industry have combined to cause construction wages to rise from about US$34,000 to about US$60,000. It is telling, too, that the wage spillovers in North Dakota are even more pronounced in those counties located in the state's oil patch. For instance, in Williams

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County, wages in the transportation industry have risen to US$81,000 whereas wages in the construction industry have risen to US$80,000.

These wage spillovers in male-dominated industries mean that even if women do not often work in the resource sector, and even if the resource sector itself does not employ a large share of the men in the economy, the effect of a resource abundance is still to increase the nonlabor income of many women in the community. Given the results in Figure 3, this will reduce the extent to which women participate in the economy. And per the literature cited above it follows that women's lower level of labor force participation will translate into lower levels of political influence.

Relaxing Some Simplifying Assumptions

Before proceeding further, I want to bring attention to two simplifying assumptions of the labor–leisure model.[8] First, the model assumes away the fact that when women exit the workforce, they become financially dependent on their husbands which, in turn, reduces their bargaining leverage in the home (Iversen & Rosenbluth, 2010) and thereby reduces their utility over the long run. A more realistic model might assume that the labor–leisure choice reflects not just utility at time t but also the negative externalities that accrue to the woman in all future periods (discounted accordingly) when she is at a weaker bargaining position in the home. Second, the model assumes away any differences between types of work. This may matter if women's labor force decisions are affected by whether the job in question is blue- or white-collar. For instance, Goldin (1995) suggests that the labor–leisure decisions of blue-collar women are particularly responsive to the effects of nonlabor income, whereas the decisions of white-collar women are less so.

Would relaxing these two assumptions change the theoretical results much? I submit that the amendments might mute the gendered resource curse, but they need not eliminate it entirely. Certainly, it is true that if utility losses stemming from reduced bargaining leverage are severe, then small or even moderate increases in nonlabor income will not cause women to reduce the number of hours dedicated to labor in the marketplace. Nevertheless, particularly large increases in nonlabor income would have the effects displayed in Figure 3. The same conclusion holds true for the labor force decisions for white-collar women. So long as their labor–leisure indifference curves are not completely horizontal, then a sufficiently large increase in nonlabor income will encourage them to substitute some hours of labor with time spent on leisure activities. Notably, as the North Dakota case discussed above makes clear, the nonlabor effects of resource wealth can be very large

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indeed, essentially doubling over the course of just a couple of years. In other words, the reason why resource wealth curses women *is precisely* because such abundance can offer very large increases in women's nonlabor income.[9]

Bringing Culture In

Thus, via a standard labor–leisure model, we can conclude that resource wealth reduces women's participation in the workforce and their political influence. Yet, recent research maintains that once one accounts for a community's attitudes toward gender equality, evidence of a gendered resource curse disappears (Groh & Rotchschild, 2012; Norris, 2009, 2014). By using the 50 U.S. states to test the theory, I hope to reduce appreciably cultural differences across units and thereby isolate the effect of resource wealth. Nevertheless, even in this sample, some cultural differences may remain (Elazar, 1966; Rice & Coates, 1995) and so it is useful to reflect on how attitudinal differences regarding gender roles might map onto the model developed above.

Extensive evidence exists that women are less likely to enter the workforce when they are embedded in cultures with inegalitarian gender attitudes (Antecol, 2000; Fernández & Fogli, 2009; Fortin, 2005; Norris, 2014; Reimers, 1985). The central question, then, is whether the effect of cultural differences makes immaterial the effect of resource abundance. At first glance, we might suspect that in a sample of the U.S. states, an observed relationship between resource wealth and women's economic and political influence would be spurious. After all, many southern states are rich in natural resources like coal and oil (e.g., Kentucky, West Virginia, Louisiana), but they also tend to have more traditional attitudes toward gender roles than the rest of the country (Rice & Coates, 1995). Yet, when we map the presence of an inegalitarian culture onto the labor–leisure model, rather than conclude that culture makes immaterial the effect of resource wealth, we learn that resource wealth and inegalitarian gender attitudes combine to *suppress even more* women's economic participation and political influence.

In more detail, consider a community with comparatively traditional ideas pertaining to women's appropriate social roles. Suppose, for instance, that individuals believe that a woman's proper role in society is as a homemaker and that men are better suited for being active participants in the economy and politics. Many women in the community will come to internalize this belief system, having been socialized into it from a young age (Thornton, Alwin, & Camburn, 1983; Vella, 1994) and having observed few other

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women who have successfully entered the workforce without paying substantial social costs for doing so (Fernández, 2013; Fogli & Veldkamp, 2011). Compared with women embedded in a community with more egalitarian attitudes, the practical effect of internalizing these beliefs is to "give rise to systematic differences in utility functions that lead to systematic differences in behavior by women . . . who face the same constrains or opportunity set" (Reimers, 1985, p. 251). In the context of the labor–leisure theory developed above, the particular expression of these "systematic differences in utility functions" is that women socialized according to inegalitarian views of gender roles will have indifference curves that reflect a more intense "taste for leisure" than do women socialized according to more egalitarian ideas. That is, when women internalize the notion that economic production is men's work whereas women's proper social roles involve homemaking and child rearing, their utility functions will place a greater weight on engaging in those latter activities than the functions of women socialized according to more egalitarian values.

We can represent this greater taste for leisure by making the indifference curves in Figure 3 steeper to reflect an individual's willingness to trade a rather large drop in consumption if that comes with even a small increase in time spent on the aforementioned nonincome generating "leisure" activities. Figure 4 makes this adjustment. Notice that even when one steepens the indifference curves, the general argument developed in the previous section holds. An increase in one's nonlabor income still reduces the number of hours one dedicates to earning an income. Notice also that with the steepened indifference curves, a hypothetically small increase in nonlabor income (i.e., a move from indifference curve U_0 to U_1) produces only a commensurately small increase in consumption, but it creates a marked increase in the number of hours dedicated to leisure. This is an important result. If women are socialized according to some culture to believe they do not have a significant role in the labor force, a resource boom-induced increase in women's nonlabor income *reduces more appreciably* their economic participation than the same increase in nonlabor income would in a more egalitarian culture.

To understand this effect of resource wealth, recognize that when a woman internalizes the notion that she ought to play a limited role in the economy, an increase in her husband's income enhances her ability to act accordingly. Were her husband's income lower, she might feel compelled to enter the workforce—despite the prevailing beliefs—to ensure consumption remains suitably high. But as her husband's income increases, consuming a suitable amount becomes easier and so she opts to spend less time in the workforce. And by working fewer hours, she conforms to her community's attitudes about women's economic roles. Put another way, augmenting the standard

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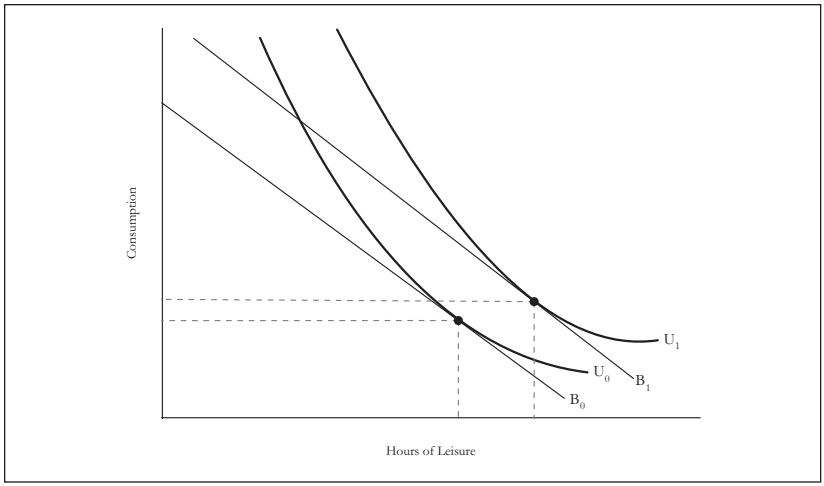

Figure 4. The trade-off when culture increases one's "taste for leisure."

labor–leisure model to incorporate gender attitudes reveals that even as patriarchal attitudes are likely to reduce women's economic participation, all else constant, among the set of communities that subscribe to such beliefs, those that *also* have an abundance of natural resources will have *even less* female participation in the economy than those similarly traditional communities that are resource scarce.[10]

This augmented model thus contributes usefully to the debate about whether cultural values trump the explanatory power of resource wealth. Scholars who home in on the importance of cultural beliefs certainly have good reason to believe that culture matters but claiming that the effect of culture makes resource wealth immaterial goes too far. Rather than being inconsequential, resource wealth *exacerbates* the low female labor force participation (and indirectly the reduced political influence) that follows when women are embedded in patriarchal cultures.

Hypotheses

The baseline labor–leisure model and its culture-augmented variant thus produce four testable hypotheses. *Hypothesis 1* derives from the baseline model and predicts that by increasing women's nonlabor income, resource wealth reduces women's workforce participation. *Hypothesis 2* follows from this expectation and from the literature regarding the relationship between women's

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economic participation and their political influence. It predicts that resource wealth diminishes women's political influence. Two other hypotheses derive from the culture-augmented model. *Hypothesis 3* states that resource wealth exacerbates the downward pressure inegalitarian beliefs regarding gender roles exert on women's economic activity. And as women's economic participation leads to their political power, *Hypothesis 4* predicts that resource wealth magnifies the negative repercussions inegalitarian beliefs pertaining to women's social roles have on women's political influence.

Data

I test the expectations using data from the U.S. states. I measure resource wealth with data from the Bureau of Economic Analysis (BEA) concerning production from the *mining industry*, that is, that industry primarily engaged in "the extraction of minerals occurring naturally: solids, such as coal and ores; liquids, such as crude petroleum; and gases such as natural gas." The BEA's data are collected in millions of 2009 dollars, which I convert to per capita amounts using census data. The per capita figures are highly skewed so I calculate the natural logarithm and use that transformation as the independent variable.[11]

There are three dependent variables. I measure women's economic participation with data from the Bureau of Labor Statistics regarding the *female labor force participation rate*. That variable is defined as the share of women 16 years or older in the civilian noninstitutionalized population who are either employed or actively seeking work. Meanwhile, I use two variables to measure women's political influence: *the voter turnout rate among women* and *the share of seats in state i*'s *legislature that women occupy*. These variables capture two different conceptions of political influence. The voter turnout variable reflects the central premise of democratic politics that political power lies in the hands of the public when they turn out during elections to select their leadership. Given the importance of the public's participation in elections for how democracies function, and given that men and women have different preferences on a wide array of policy issues, the rate at which women turn out to vote is a particularly important indicator of their political influence.

That said, women's political power can also be conceived according to the amount of control they exert over the actual policymaking process. The data are clear that female legislators tend to have different policy preferences and legislative agendas than their male counterparts do (Chattopadhyay & Duflo, 2004; Welch, 1985). As such, when we assess women's political power, it is important to gauge just how much control they have over the

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state's policymaking apparatus. This influence is measured well by the share of legislative seats women hold.

The models also include the following control variables. *Per capita GDP* controls for the effect of economic development on women's labor force participation (see Goldin, 1995; Iversen & Rosenbluth, 2010) and for the fact that richer populations assign a higher premium to postmaterial concerns like gender equality (Inglehart, 1997). The size of the *adult female civilian population* enters all models as well. In the labor force model, it accounts for the possible number of female labor force participants. In the two political influence models, it controls for the pool of potential female voters, which might correlate both with female voter turnout rates and the number of women in the legislature. The *share of lower house seats occupied by Democrats* controls for several factors.[12] In the labor force model, it controls for the stylized fact that left-of-center parties are more averse to low employment than right-of-center-parties are (Hibbs, 1987). Even though labor force participation and unemployment are distinct concepts, they are highly correlated and the parties might differ in how they perceive and respond to low levels of female labor force participation. In the voter turnout model, it controls for the gender gap in the support for the Democratic Party. And in the female seat share variable, it accounts for the finding that left-of-center parties correlate positively with female political representation (Kenworthy & Malami, 1999). (Note that including this partisanship variable requires that Nebraska be excluded from the sample as its legislature is nonpartisan.) In the female seat share model, I also control for Squire's measure of *legislative professionalism* (Squire, 2007) because Squire (1992) finds that variable suppresses female representation in state legislatures.

Finally, we need a measure of state *i*'s culture as it pertains to gender roles. Although the U.S. states are ideal for adjudicating between the resource curse and cultural perspectives on women's economic and political power because the cultural differences between the states are smaller than they are across countries, cultural differences might still exist (Elazar, 1966; Rice & Coates, 1995). Given the serious challenges to resource curse theories that Norris and Groh and Rotchschild develop, it is important to account for these differences when testing Hypotheses 1 and 2. Furthermore, Hypotheses 3 and 4 require a measure of culture as those hypotheses predict that resource abundance magnifies the downward pressure traditional notions about gender roles exert on women's economic activity and political influence.

The General Social Survey (GSS) is the most comprehensive source of survey data regarding Americans' gender attitudes. Unfortunately, to ensure privacy, the survey does not make public the state in which a particular respondent resides. However, the survey does make public the respondent's

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geographical region. This is helpful because Rice and Coates (1995), using these GSS data, find that residents of southern states tend to hold more traditional views about women's economic and political roles than respondents residing elsewhere in the country. Given this finding, I measure attitudes toward gender equality with a dummy variable that equals "1" if state i is southern according to the GSS's region codes.[13]

Sample

Although Haber and Menaldo (2011) argue that time-series-cross-section (TSCS) samples are optimal for studying resource curse hypotheses, in the present application, a cross-sectional sample is preferred. The main issue is that the economic data used in the models are available only since 1997, given the BEA's switch to the North American Industry Classification System (NAICS) codes that year. But a 1997 through 2012 time period is much too short for reliable time-series estimates.[14] In dynamic panels with short time series, the inclusion of unit-specific fixed effects biases downward the estimate of the dynamic parameter (Nickell, 1981). And if there are regressors correlated with the lagged dependent variable, their estimated coefficients may be biased as well. In addition, Achen (2000) warns that in cases where the dependent and independent variables are heavily trended over time, inclusion of a lagged dependent variable can suppress the explanatory power of the independent variable and even cause its estimated coefficient to reverse signs. This is likely to be a more serious problem in TSCS data with short time series because the offending trending is likely to be more pronounced when there are only a few time periods.

Furthermore, some of the variables that are central to this study do not change much over time. The most obvious culprit is my measure of culture, which is time invariant. This is problematic because in a TSCS sample, state-fixed effects warrant inclusion to model unit heterogeneity, but these are perfectly correlated with the measure of culture and so we cannot estimate its effect. As we need to include a measure of culture to adjudicate between the resource curse and cultural perspectives, we need a sampling strategy that affords the ability to estimate its effect reliably. Likewise, because elections do not occur annually—and even when they do occur, one does not necessarily observe changes in the gender composition of legislatures—the female seat share variable moves sluggishly over time. This stickiness makes obtaining reliable time-series estimates difficult. Given these issues, the main results in this article derive from cross-sectional samples. That said, Appendix B presents results obtained from TSCS samples that echo the preferred cross-sectional estimates.

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Reverse causality might be a problem in the cross-sectional samples, however. Suppose that women enter the labor force in higher rates where the postindustrial sectors of the economy are well developed (see Iversen & Rosenbluth, 2010). Or, suppose that where women have more political influence, governments do a better job luring investment to those parts of the economy where women tend to seek and find employment. If the dependent variables and the resource variable are averaged over the same period, we may observe a negative coefficient on the resource variable but not necessarily because a resource curse exists. Rather, the correlation might merely reflect the fact that the non-resource-related factors that caused women to enter the workforce in greater numbers also reduce the importance of natural resources to the state's economy.

To deal with this concern, I include the resource abundance variable as its level in 1997 whereas data for the dependent variables are averaged for the full 1997 through 2012 period. Therefore, the estimated coefficient on the resource variable refers to its effect in 1997 on women's economic participation and political influence over the subsequent 14 years. The per capita GDP variable also enters the model as its level in 1997 to avoid any endogeneity it might have with the female labor force participation rate. For its part, the Squire Index enters as its average across two years—1996 and 2003—as those are the most recent years for which Squire (2007) calculates the index. The remaining control variables enter as their average levels for the period 1997 through 2012.

Results

The six regressions displayed in Table 1 test Hypotheses 1 and 2. For each of the three dependent variables, I estimate two regressions. Models 1 to 3 estimate the effect of resource wealth while controlling for all the potentially confounding variables discussed above except the southern dummy variable. Models 4to 6 include the dummy variable. Estimating both equations allows assessment of just how much of the effect of resource abundance is explained away by that variable's correlation with more traditional attitudes toward gender roles. If the effect of resource abundance is statistically significant and substantially appreciable only when the cultural proxy is excluded, then we will be obliged to conclude that the effect of culture does in fact subsume the effect of resource wealth.

Model 1 displays a negative and statistically significant coefficient on the natural resource variable. The coefficient's magnitude conveys that a 1% increase in per capita mining production in 1997 reduces female labor force participation over the subsequent 14 years by about 0.007 percentage points.[15]

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Table 1. Does a Gendered Resource Curse Exist in the United States?

Model:	(1)	(2)	(3)	(4)	(5)	(6)
DV	Labor force participation	Turnout	Female legislators	Labor force participation	Turnout	Female legislators
Resource wealth	−0.73**	−1.03***	−1.13**	−0.56**	−0.83**	−0.78*
	(0.27)	(0.35)	(0.52)	(0.25)	(0.32)	(0.46)
Per capita GDP	8.07**	2.28	11.2**	6.25**	0.15	9.65**
	(3.14)	(3.54)	(5.46)	(2.55)	(3.02)	(4.73)
Democratic seat share	−11.6***	−8.18	−2.05	−9.60***	−5.85	4.11
	(3.51)	(5.11)	(5.53)	(3.11)	(5.00)	(5.81)
Female population	−1.69***	−1.76***	−1.45	−1.38***	−1.40***	0.52
	(0.46)	(0.56)	(1.03)	(0.42)	(0.51)	(1.23)
Squire index			6.88			−10.6
			(8.65)			(9.34)
South				−2.80**	−3.25***	−7.43***
				(1.08)	(1.19)	(2.29)
Constant	−2.29	55.6	−78.3	13.7 (25.6)	74.2**	−76.1
	(30.6)	(36.3)	(58.7)		(32.3)	(50.5)
Observations	49	49	49	49	49	49
Adjusted R^2	.416	.176	.109	.501	.242	.287

Standard errors in parentheses
*p< .1. **p< .05. ***p< .01.

If this seems a small price to pay for resource wealth, reflect on the fact that a 1% increase in per capita mining production is a trivially small difference compared with what actually exists between resource abundant and resource scarce states. The three cases introduced at the beginning of this article—North Carolina, Georgia, and Louisiana—are illustrative. In 1997, per capita production from mining was about US$135 in North Carolina and about US$300 in Georgia. In Louisiana, however, production was about US$6,500 per person, some 2,100% higher than in Georgia and 4,750% higher than in North Carolina. Given the estimates in Model 1, these differences imply that female labor force participation in Louisiana would be 2.3 percentage points lower than in Georgia and 2.8 percentage points lower than in North Carolina. Given that the standard deviation in female labor force participation in this sample is 4%, these differences are quite sizable.

Model 2 shows that resource wealth also reduces voter turnout among women, consistent with Hypothesis 2. Specifically, a 1% increase in per capita mining production reduces by 0.01 percentage points voter turnout among women. According to these estimates, the abovementioned 2,100% difference in per capita mining production between Louisiana and Georgia will

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reduce voter turnout among women by about 3.1 percentage points in the resource abundant state. And, the aforementioned 4,750% difference between Louisiana and North Carolina reduces turnout by about 3.8% in the resource rich state.[16]

Model 3 shows that resource wealth also reduces the share of seats women occupy in the state legislatures. Specifically, a 1% increase in per capita mining production reduces by about 0.01 percentage points the share of women legislators. And as before, the practical effects implied by these estimated coefficients can be large. The aforementioned 2,100% difference in per capita production reduces the share of female legislators by about 3.5 percentage points in the resource rich state, whereas the 4,750% difference cited above reduces women's seat share by about 4.4 percentage points, *ceteris paribus*.

Before discussing Models 4 to 6, Appendix A presents two auxiliary regressions that warrant discussion. My theory hypothesizes that the effect of resource wealth on voter turnout among women and the share of legislative seats women occupy is indirect, that resource wealth directly reduces women's participation in the workforce and it is that reduced economic activity that diminishes women's political power. Although Model 1 in Table 1 shows a negative effect of resource wealth on women's labor force participation, we do not yet know if the negative coefficients estimated in Models 2 and 3 derive from the impact of resource abundance on women's labor force participation or from some other mechanism. The two models in Appendix A investigate this issue by re-estimating Models 2 and 3 while including the female labor force participation rate on the right-hand side of the model. If my intuition is correct, then these models should yield positive and statistically significant coefficients on the labor force variable, whereas the estimated coefficient on resource wealth should be much smaller than in Models 2 and 3 and statistically insignificant. Once I have controlled for the mechanism by which resource wealth is hypothesized to shape women's political influence, resource abundance will have no explanatory power of its own. The results are supportive. In both models, the female labor force participation rate has a substantively large and statistically significant effect, whereas the coefficients on the resource abundance variable are statistically insignificant.

Do Cultural Differences Subsume the Resource Curse?

Returning to Table 1, Models 4 to 6 re-estimate the effects of resource abundance on the three dependent variables, but now I include the dummy variable for southern states. Does including this proxy for culture make the

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effects of resource wealth disappear as in Norris (2014) and Groh and Rotchschild (2012)?

The results continue to show ill effects of resource abundance. In Model 4, for instance, we still observe a negative and statistically significant effect of resource wealth on female labor force participation. To be sure, the coefficient is smaller than in Model 1, indicating that some of the estimated effect in Model 1 owes to the correlation between resource wealth and southern states. Nevertheless, the estimated coefficient is statistically significant and substantively meaningful. The difference in per capita production exhibited between Georgia and Louisiana would reduce female labor force participation in the latter by about 1.7 percentage points whereas the difference exhibited between North Carolina and Louisiana would reduce women's economic activity in the latter state by about 2.1 percentage points.

The negative effect of resource abundance on voter turnout among women also remains when we include the southern dummy variable. Indeed, in Model 5 we see that, rather the being subsumed by the effect of culture, the effects of resource abundance can be as large as the effects of residing in a state with more traditional attitudes toward gender. For instance, in this sample, the 10th percentile in terms of per capita mining production is about US$46, whereas the 90th percentile is about US$4,000. Given the coefficient estimates, this 8,700% difference corresponds to about a 3.6 percentage point reduction in the female voter turnout rate. This is almost precisely the same effect as being a southern state has on the female voter turnout rate—the coefficient on the southern dummy conveys that southern states tend to have turnout rates about 3.3 percentage points lower than the rest of the country.

Finally, Model 6 shows that resource wealth continues to reduce the share of seats women occupy in the state legislatures. Specifically, a 1% increase in per capita mining production reduces by about 0.008 percentage points the share of women legislators. As before, this effect is somewhat smaller than in Model 3, but it is substantively meaningful nonetheless. The abovementioned 8,700% differences that distinguishes the sample's 10th percentile in terms of resource production from the 90th is estimated to diminish the share of seats women hold in the resource rich state by about 3.5 percentage points.

Taken together, the results in Table 1 offer strong evidence that there exists a gendered resource curse. Per Hypothesis 1, we have seen that an abundance of resources reduces female labor force participation. And per Hypothesis 2, we have also observed that resource wealth diminishes women's political influence by causing there to be lower levels of voter turnout among women and fewer female legislators.

But perhaps most importantly, we have seen that the ill effects of resource wealth continue to hold once we control for the presence of cultural attitudes

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that are more traditional with respect to gender roles. Although the inclusion of the southern dummy variable makes the magnitude of resource wealth somewhat smaller, that coefficient remains substantively important and statistically significant in all cases. In combination, then, these results are very much in keeping with Ross's (2008) argument that resource wealth reduces women's economic activity and through that effect, their political power.[17,18]

Anecdotal Evidence

The case of Wyoming illustrates well the gendered consequences of resource wealth. In fact, the case approximates a natural experiment. Since the early 2000s, Wyoming has experienced a tremendous resource boom that derives from three factors. First, the sharp rise in oil prices in 2005 stemming from Hurricane Katrina's disruption of oil production along the Gulf Coast obliged oil companies to ramp up production elsewhere in the country. Second, recent innovations in hydraulic fracturing have greatly increased the state's production of natural gas.[19] Third, coal prices have fallen in recent years. Typically, falling prices would be a problem for a coal-rich state like Wyoming, but the state's coal seams have much lower extraction costs than the mines in Appalachia and so can remain profitable even at low prices. Accordingly, coal operations are shutting their doors in Kentucky and West Virginia and moving to Wyoming (Drajem, 2014; Loh, 2014). As a result of these factors, resource production in Wyoming has skyrocketed. Between 1997 and 2004, average production in the resource sector was about US$14,500 per person. Between 2005 and 2012, averaged production increased 45% to about US$21,000 per person. This trend is displayed (in logged levels) in the top panel in Figure 5.

The theory advanced in this article (and in Ross, 2008) maintains that this resource boom should cause female labor force participation to decline. And indeed, the second graph in Figure 5 shows precisely that.[20] Prior to 2005, female labor force participation had been steadily increasing in Wyoming. The rate was 62% in 1997, 63% in 1998, 64% in 1999, and 67% in 2000. The resource boom has erased these gains, however. In 2005 and 2006, just as resource production began to increase, female labor force participation fell to 64%. By 2012, the rate had declined all the way back to 62%. Essentially, the booming resource sector gave away all of the gains in female labor activity that had been achieved since 1997.

The bottom two panels in Figure 5 show that women's *political* influence has also waned with the resource boom. The third panel shows that the female voter turnout rate has decreased over time. The decline is especially prominent in midterm elections. In the midterm elections of 1998 and 2002, for

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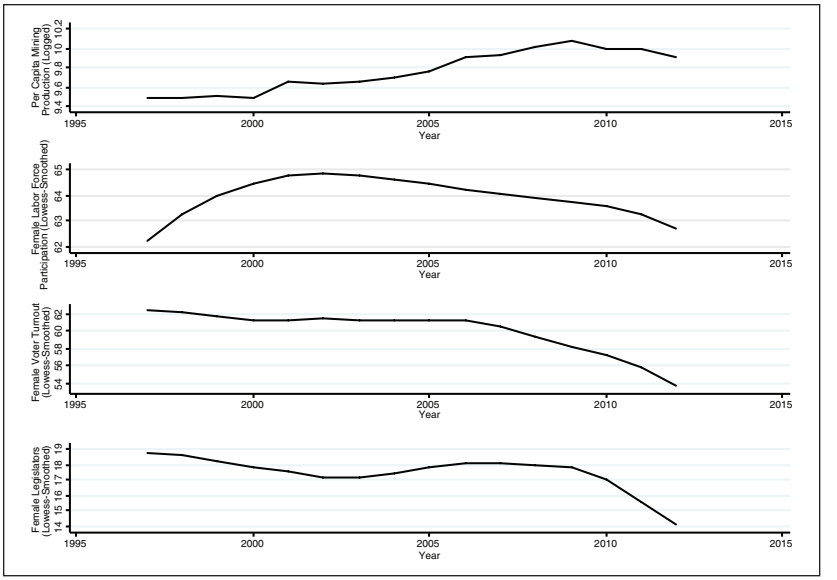

Figure 5. Resource wealth and women's economic and political power in Wyoming.

example, average female voter turnout was 56%. In the 2006 and 2010 midterms, however, turnout averaged only 51.6%. The share of legislative seats occupied by women has also declined over time. Since 1979, when the legislative seat share data series starts, 4 of the 5 years where women held the fewest seats in the legislature occurred since 2005.[21] And 6 of the 10 worst years for women legislators were post-2005.[22] Thus, per the theory developed here, women's economic and political clout in Wyoming seems negatively correlated with that state's resource wealth.[23]

Does Resource Wealth Exacerbate the Problems Patriarchy Produces?

Having confirmed Hypotheses 1 and 2, I now test Hypotheses 3 and 4, which predict that while those states with more traditional gender attitudes will have lower levels of female labor force participation, lower voter turnout among women, and fewer women legislators, those traditional states that *also* have an abundance of natural resource wealth will *perform even worse* on these dimensions.

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Testing these two hypotheses is straightforward. From Models 4 to 6 in Table 1, we know that southern states perform worse than the rest of the country in terms of women's economic and political influence. And from Rice and Coates (1995), we know that this owes in large part to the fact that residents of southern states hold more traditional beliefs about women's capabilities and their proper social roles. My hypotheses predict that the magnitude of the effect of these beliefs depends on the extent of resource wealth. We can test this with a multiplicative interaction term between the southern dummy and the resource variable. In more detail, consider the equation

$$Y_i = \alpha + \beta_1 South_i + \beta_2 Resources_i + \beta_3 South_i \times Resources_i + \beta X_i + \varepsilon_i, \quad (1)$$

where Y is one of the three dependent variables and the i subscript denotes the various states. Hypotheses 3 and 4 predict that the marginal effect of $South$ will be negative, but even more so among those southern states that are also resource rich. We can identify whether this expectation is supported by interrogating the sign and statistical significance of the quantity $\partial South / \partial Resources = \beta_1 + \beta_3 \times Resources$. Hypotheses 3 and 4 expect that this quantity will be negative for the range of $Resources$ that characterizes southern states and, more importantly, that this quantity becomes more negative as resource wealth increases.

The three models in Table 2 present the relevant estimates. Start with Model 7, where the dependent variable is the female labor force participation rate. At first glance, these results would appear to refute Hypothesis 3. Although the coefficients take the expected signs, neither the coefficient on the southern dummy variable nor that on the interaction term is statistically significant. However, recall that the coefficient on the southern dummy by itself is the effect of that variable when the natural logarithm of per capita resource production equals zero (i.e., when per capita production equals US$1). This value never occurs in the sample. Even Maine, the state with the smallest resource sector in this sample, has a per capita production level of US$6. And in the South in particular, the minimum level of per capita production is US$46. And regarding statistical significance, whereas neither the southern dummy nor its interaction with resource abundance is statistically significant, *jointly* they are $P \approx .03$, suggesting that either the southern variable or its interaction with resource wealth affects female labor force participation.[24]

To help interpret the coefficient patterns, Figure 6 plots the marginal effect of being a southern state on female labor force participation across a range of resource abundance levels. The solid line is the marginal effect of being a southern state, the dashed lines are 90% confidence intervals around that

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Table 2. The Joint Effect of Traditional Gender Beliefs and Resource Wealth.

Model:	(7)	(8)	(9)
DV:	Labor force participation	Turnout	Female legislators
South	−1.09 (4.12)	−1.53 (5.00)	1.38 (7.10)
Resource wealth	−0.45 (0.29)	−0.73* (0.39)	−0.24 (0.58)
South × Resource wealth	−0.30 (0.67)	−0.31 (0.86)	−1.57 (1.13)
Per capita GDP	5.85** (2.54)	−0.24 (3.14)	7.70 (4.92)
Democratic seat share	−8.94** (3.51)	−5.18 (5.23)	7.62 (6.12)
Female population	−1.33*** (0.43)	−1.35** (0.53)	0.82 (1.29)
Squire index			−11.4 (9.25)
Constant	16.6 (25.3)	77.2** (32.9)	−62.2 (52.0)
Observations	49	49	49
Adjusted R^2	.492	.226	.297

Standard errors in parentheses.
*p < .1. **p < .05. ***p < .01.

effect, and the underlying histogram plots the distribution of resource wealth for southern states. The results show that being a southern state generally has a negative effect on women's labor force participation. There are only two states that are classified as southern for which this result does not hold.[25] Notice also, though, that the slope of the marginal effect line is negative, indicating that the downward pressure of the southern state's more traditional gender attitudes becomes more intense in those southern states that also have resource abundance.

The joint effects of culture and resource wealth on the female labor force participation rate can be sizable. Among southern states, the 10th percentile in terms of resource abundance is South Carolina, where the natural logarithm of per capita resource production is about 4.4 (i.e., about US$82). At this level of resource abundance, the comparatively traditional attitudes pertaining to gender that characterize the southern states reduce female labor force participation by about 2.4 percentage points. Meanwhile, the 90th percentile in terms of resource production is Texas, where the natural logarithm of per capita resource production is about 8.5 (i.e., about US$5,200). At this level of resource wealth, those traditional attitudes reduce the female labor force participation rate by about 3.6 percentage points. Thus, the female labor force participation rate is lower in the South than elsewhere in the country, but it is lower still in those southern states with an abundance of resource wealth. This is precisely what the culture-augmented labor–leisure models expect.

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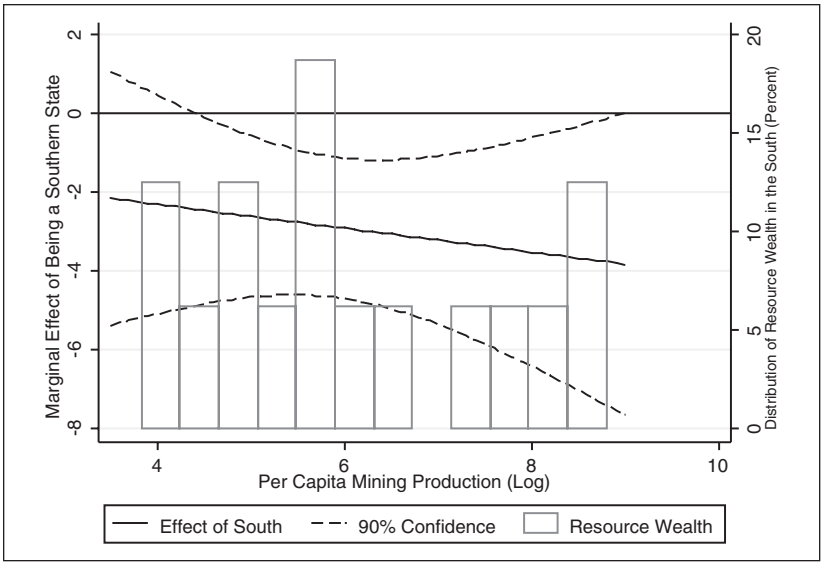

Figure 6. The joint effects of traditional gender attitudes and resource wealth on female labor force participation.

The results of Model 8 are similar. As in Model 7, neither the coefficient on the southern dummy nor that on the interaction term is statistically significant, but jointly they are $p < .05$. Panel (a) in Figure 7 displays the relevant marginal effect graph. The graph shows that for the most part, being a southern state reduces turnout among women and that this effect grows stronger as resource wealth increases. There are a few exceptions to this tendency, however. As in Figure 6, there are two states with very low levels of resource abundance for which being a southern state does not have any effect on women's voter turnout rate (see Note 25 for a discussion of these cases). There are also three states with very high levels of resource wealth where the marginal effect of being a southern state, while still negative, is no longer statistically significant at conventional levels.[26] Although one might conclude that these extreme cases nullify the hypothesis under scrutiny, keep in mind that these extreme cases make up a small share of the sample. From the underlying histogram in Panel (a) of Figure 7, we can conclude that for about 70% of the sample, increased resource wealth exacerbates the effect of more traditional attitudes toward gender roles on voter turnout among women.

Model 9 further confirms Hypothesis 4 with data regarding the share of legislative seats that women occupy. However, there exists an important

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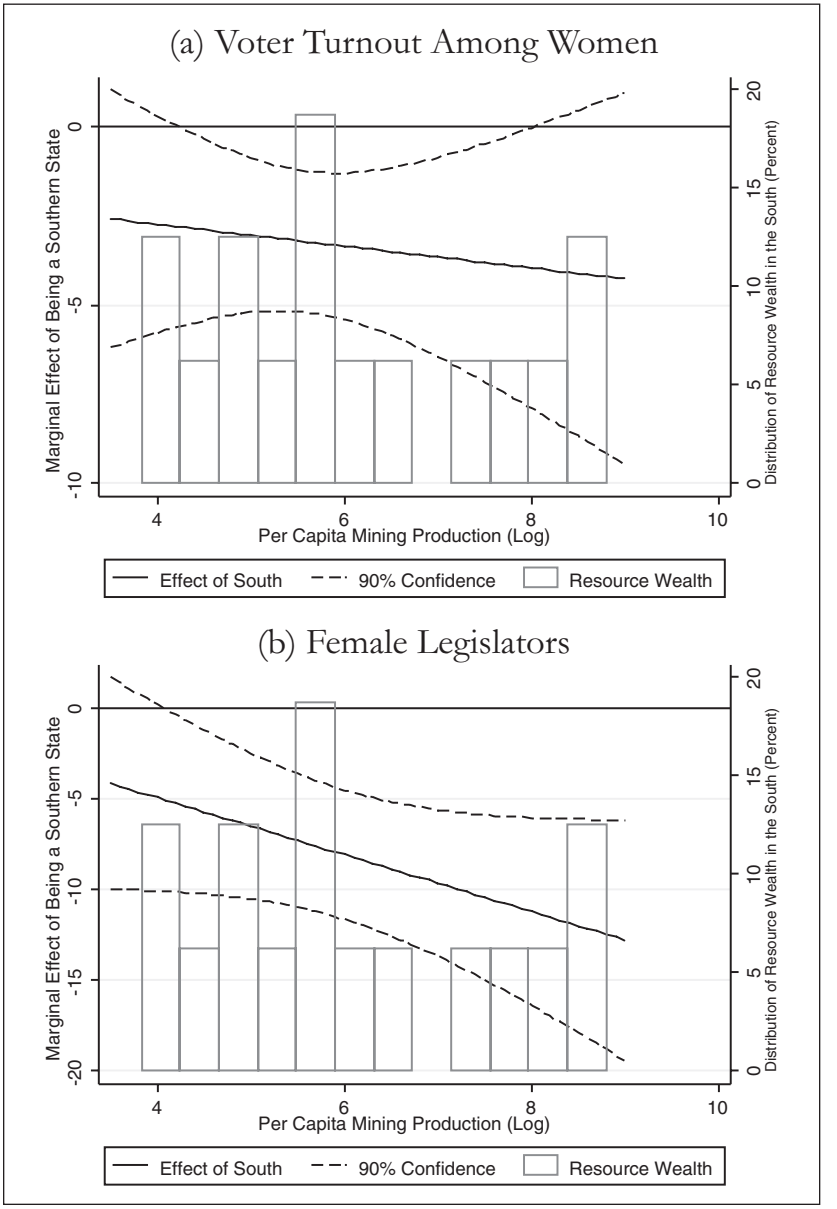

Figure 7. Traditional gender attitudes, resource wealth, and women's political influence.

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difference in the coefficient patterns, namely, there is a *positive* coefficient on the south dummy variable. This would appear to run contrary to the expectations in Hypothesis 4. Keep in mind, however that this positive effect is the estimated effect of being southern when the natural logarithm of the resource wealth equals zero, a value that never occurs in this sample. Also, the large negative coefficient on the interaction term indicates that at suitably high levels of resource wealth, the effect being a southern state will indeed be negative. And as in the previous two models, the joint effect of the two variables is statistically significant, $P \approx .001$, even as the variables are not individually.

Panel (b) in Figure 7 displays the relevant graph. The results further confirm the culture-augmented labor–leisure model. Southern states generally have fewer women in their legislatures, but resource abundance exacerbates this tendency. At low levels of resource abundance, say, the level that characterizes South Carolina, the traditional beliefs pertaining to gender that characterize southern states reduce the share of legislative seats women occupy by about 5.7 percentage points. That effect is large in its own right, but resource wealth worsens the problem. At resource levels equal to the 90th percentile among southern states, those traditional attitudes regarding gender roles reduce the share of legislative seats women occupy by about 12 percentage points.

Summary of TSCS Results

The cross-sectional results thus generate two important conclusions: (a) that resource wealth reduces women's economic participation and political influence and (b) that resource wealth exacerbates the ill effects of patriarchal gender attitudes on those same outcome variables. Before concluding, however, I want to highlight that even as I argued above that various data limitations make cross-sectional samples the preferred way to test the hypotheses derived in this article, estimates from TSCS samples largely confirm these cross-sectional results. The models in Appendix B present two sets of results. Models B1 to B5 estimate the effects of resource wealth while controlling for the comparatively traditional gender attitudes of the southern states. Models B6 to B10 examine the interactive effects of the South's gender attitudes and resource wealth. I discuss in more detail the various estimation issues and the results in the appendix, but I note here that despite the data constraints, the results largely echo the conclusions summarized above. This should increase confidence in the conclusion that there does indeed exist a gendered resource curse in the United States.

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Conclusion

Over the past few decades, it has become a stylized fact that natural resource wealth undermines macroeconomic performance, weakens political institutions, and sabotages the prospects of democratic rule. More controversial, however, is the notion that resource wealth also subverts women's economic and political influence. Ross (2008) was the first to develop this provocative claim, but subsequent research finds no evidence of a gendered resource curse when one accounts for a community's attitudes toward gender equality.

I have advanced this debate in two ways. First, I have investigated whether variation in natural resource wealth across the U.S. states induces the sort of gendered effects about which Ross hypothesizes. I have argued that if there exists such a curse that is distinct from a community's attitudes toward gender equality, it should be readily apparent in the states because resource wealth varies significantly among them whereas their cultural differences are much truncated compared with what one observes in cross-national studies. Second, I have also developed a culture-augmented labor–leisure model of economic participation that concludes that patriarchal attitudes do not make irrelevant the gendered effects of resource wealth. Instead, those patriarchal attitudes and resource wealth combine to suppress even more women's economic and political influence.

State-level statistics show evidence of a gendered resource curse in the sense that resource wealth reduces women's economic and political clout and it exacerbates the economic and political ills associated with patriarchy. These results are troubling in part because the United States is a hard case to find evidence of a resource curse. We might expect the country's status as a developed economy would inoculate the states from the social ills that accompany resource wealth elsewhere in the world. The results presented here challenge that assumption and show that even among the richest countries in the world, resource curses can manifest themselves.[27]

These results are also timely. The United States is presently in the midst of an unprecedented oil and natural gas boom that has seen it surpass Russia in natural gas production and Saudi Arabia in combined oil and liquid natural gas production. By and large, observers have been upbeat regarding this state of affairs, linking the oil and gas boom to above average employment rates in places like Texas, North Dakota, and Pennsylvania. But, when considering the results presented in this article, the increased resource extraction should give us pause. Indeed, I have suggested that this boom might, in time, have appreciable negative implications for women's economic opportunities and therefore for their political influence. It is possible, of course, that future

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economic or political conditions will be different than past ones such that the effects seen in this article will not manifest themselves. Yet, policy makers would do well to consider implementing safeguards that preclude the gendered social ills stemming from resource abundance from becoming manifest in the resource rich areas of the country.

Appendix A

Auxiliary Regressions

Table A1. Auxiliary Regressions.

Model:	(A1)	(A2)
DV:	Turnout	Female legislators
Resource wealth	−0.36 (0.36)	−0.71 (0.54)
Per capita GDP	−5.14* (2.64)	6.84 (5.12)
Democratic seat share	2.48 (4.11)	4.98 (7.39)
Female population	−0.21 (0.61)	−0.28 (0.99)
Female labor force participation	0.92*** (0.17)	0.60* (0.30)
Squire index		4.37 (8.62)
Constant	57.7** (27.8)	−82.7 (57.4)
Observations	49	49
Adjusted R^2	.479	.163

Standard errors in parentheses.
*p < .1. **p < .05. ***p < .01.

Appendix B

TSCS Results

Models B1 to B5 in Table B1 show TSCS estimates of the effects of resource wealth when controlling for the comparatively traditional attitudes of the southern states. The inclusion of the southern dummy precludes the use of country-specific fixed effects in these models; instead, I estimate a random effects model.[28] Year fixed effects are included to account for any temporal heterogeneity, however. All time varying independent variables are lagged one period. A lagged dependent variable is included to model dynamics. Standard errors are clustered by state. Finally, diagnostics reveal Delaware to be a particularly influential outlying observation in the labor force and legislative seat share models. As such, I estimate those models both with and without that case.[29]

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Table B1. TSCS Results.

Model:	(B1)	(B2)	(B3)	(B4)	(B5)	(B6)	(B7)	(B8)	(B9)	(B10)
DV:	Labor force participation	Labor force participation	Turnout	Female legislators	Female legislators	Labor force participation	Labor force participation	Turnout	Female legislators	Female legislators
L. dependent variable	0.93***	0.92***	0.74***	0.95***	0.95***	0.93***	0.92***	0.74***	0.95***	0.95***
	(0.012)	(0.013)	(0.041)	(0.0089)	(0.0089)	(0.012)	(0.013)	(0.041)	(0.0091)	(0.0091)
L. resource wealth	−0.014	−0.048**	−0.29***	−0.032	−0.041	−0.025	−0.042*	−0.24**	−0.030	−0.026
	(0.023)	(0.022)	(0.083)	(0.035)	(0.039)	(0.023)	(0.024)	(0.11)	(0.046)	(0.046)
L. per capita GDP	0.56**	0.89***	−0.17	0.45	0.42	0.60***	0.88***	−0.33	0.44	0.37
	(0.23)	(0.26)	(0.89)	(0.29)	(0.34)	(0.21)	(0.26)	(0.90)	(0.30)	(0.33)
L. female population	−0.096**	−0.15***	−0.34**	−0.0018	−0.0062	−0.10**	−0.15***	−0.32**	−0.00087	−0.00041
	(0.043)	(0.045)	(0.14)	(0.058)	(0.068)	(0.041)	(0.046)	(0.15)	(0.062)	(0.069)
L. democratic seat share	−0.34	−0.60**	−1.74	0.42	0.42	−0.39	−0.57*	−1.50	0.43	0.51
	(0.30)	(0.29)	(1.24)	(0.43)	(0.44)	(0.32)	(0.30)	(1.29)	(0.45)	(0.45)
South	−0.24**	−0.14*	−0.71*	−0.24**	−0.23	−0.38	−0.035	−0.093	−0.21	0.051
	(0.094)	(0.084)	(0.37)	(0.11)	(0.14)	(0.29)	(0.28)	(1.18)	(0.43)	(0.46)
South × Resource wealth						0.025	−0.018	−0.11	−0.0044	−0.049
						(0.044)	(0.045)	(0.21)	(0.076)	(0.073)
Constant	−1.47	−3.88	37.6***	−2.81	−2.38	−1.75	−3.78	38.8***	−2.77	−2.10
	(2.22)	(2.41)	(10.8)	(3.11)	(3.40)	(2.09)	(2.41)	(10.7)	(3.21)	(3.35)
Observations	734	720	734	734	720	734	720	734	734	720
R^2	.94	.94	.87	.95	.95	.94	.94	.87	.95	.95
Delaware included?	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	No

Standard errors, clustered by state, in parentheses. "L. *X*" denotes that variable *X* is lagged one period. All models include year dummy variables.
*$p < .1$. **$p < .05$. ***$p < .01$.

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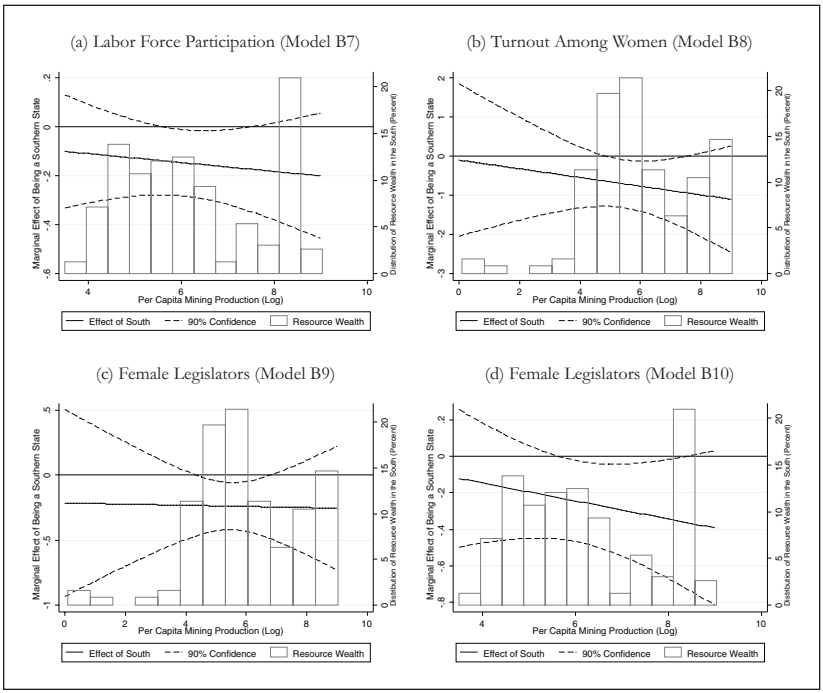

Figure B1. TSCS results: The joint effect of traditional gender attitudes and resource wealth.

Regarding female labor force participation, Model B2, which excludes Delaware, shows that a permanent log-point increase in per capita resource production reduces female labor force participation by 0.05 percentage points the next year and by about 6 percentage points over the long run. This negative effect is precisely what the baseline labor–leisure model predicts. Regarding women's political influence, Model B3 shows that resource wealth reduces voter turnout among women.[30] The lone disconfirming TSCS result is that resource wealth does not affect the gender composition of legislatures, regardless of whether Delaware is excluded from the sample. This is not too surprising, however, given the stickiness of this variable over time. Nearly 40% of the female seat share observations do not change from the year preceding it. Such stickiness impedes obtaining reliable time-series estimates.

TSCS results also support the culture-augmented labor–leisure model. Model B7 estimates the joint effect of resource wealth and the South's

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comparatively traditional gender attitudes on female labor force participation (excluding Delaware). The corresponding graph (Panel (a) in Figure B1) shows that those more traditional gender attitudes reduce female labor force participation and that this effect intensifies as resource wealth increases. Although the relevant marginal effect is not statistically significant at very low or very high levels of resource wealth, for a substantively appreciable share of cases—between the sample's 40th percentile and its 70th—it is. Model B8 and Panel (b) in Figure B1 show similar results when the dependent variable is voter turnout among women, and Models B8 and B9 (and Panels (c) and (d) in Figure B1) show similar effects when the dependent variable is the share of legislative seats women occupy, although the effects are stronger when Delaware is excluded from the sample. Overall, then, despite the aforementioned data constraints, results from TSCS samples largely confirm the cross-sectional estimates.

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Notes

1. Data and supporting materials necessary to reproduce the results presented here are available at https://sites.google.com/site/joelsimmons. Regarding resource wealth and regime type, see also Haber and Menaldo (2011) and Luong and Weinthal (2006).
2. Goldberg, Wibbels, and Mvukiyehe (2008) document the considerable variation in resource wealth across the states.
3. The gender composition of legislatures is a commonly used measure of women's political influence (Iversen & Rosenbluth, 2010; Kenworthy & Malami, 1999; Matland, 1998; Ross, 2008).
4. Ross (2008) develops a similar argument.

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5. The turnout data include information from both presidential and midterm elections.
6. The Bureau of Labor Statistics reports that in 2013 women comprised only 13% of all employees in the mining industry. For comparison, women comprised about 45% of wholesale and retail employees, and 75% of education and health employees.
7. These statistics come from the North Dakota Department of Minerals as quoted by Blaire Briody, reporter for *The Fiscal Times* (Briody, 2013).
8. The author thanks an anonymous reviewer for pointing out these issues.
9. Notably, there may exist a second mechanism through which resource wealth reduces women's labor force participation. Analyses of the U.S. states not presented here to preserve space show that a booming resource sector crowds out the development of the kinds of private sector industries where women tend to work. In more detail, data from the Bureau of Labor Statistics reveal, consistent with existing scholarship (Iversen & Rosenbluth, 2010), that most women tend to work in service industries, that is, in the postindustrial sector of the economy. Notably, production in the postindustrial sector is declining with resource wealth. A bivariate regression on a cross-section of the U.S. states between 1997 and 2012 shows that per capita level of resource production has a negative statistically significant effect on production in the postindustrial economic sector: $\hat{\beta} = -0.07; p = .001; R^2 = .24$. In short, resource wealth atrophies the postindustrial sector. This negative relationship holds when controlling for per capita GDP in the state, total population, the partisanship of the state legislature, and a set of regional dummy variables. This crowding out of the postindustrial sectors of the economy matters for female labor force participation because even if the nonlabor effects of a resource boom are too small to offset women's utility losses due to reduce bargaining power in the home, and even if those nonlabor effects are too small to persuade white-collar women from allocating fewer hours to labor, women residents of resource rich states may still enter the workforce in fewer numbers for the simple reason that the sectors of the economy where those women would work are underdeveloped and therefore have a low demand for workers. Results for these analyses are available in the online appendix.
10. It bears mentioning that men embedded in cultures with more traditional gender values will *also* be socialized accordingly. This may be an obvious point, but highlighting it illustrates another way that culture and resource wealth might combine to suppress women's economic and political influence. *Ceteris paribus*, men so socialized may be more likely to dictate that their spouses refrain from entering the workforce than men socialized according to more egalitarian attitudes. If a resource boom increases the income of these men, they may express those dictates more stridently than when their income is low and current consumption levels are insufficient. Thus, although the culture-augmented model developed above assumes that women choose their labor activities, we can reach similar conclusions about the combined effect of culture and resource wealth if we focus instead on how those variables shape the way men relate to their wives.

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11. The results presented below hold when normalizing resource wealth by GDP instead of by population.
12. Carl Klarner gathers these data from http://www.indstate.edu/polisci/klarner-politics.htm.
13. The included states are those in the General Social Survey's (GSS) "South Atlantic," "East South Central," or "West South Central" regions: Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Oklahoma, Louisiana, and Texas.
14. The 2012 end point reflects the availability of data on the partisan composition of the state legislatures.
15. In linear-log models like this one, one can calculate the effect of a percent, p, increase in X as $\beta * log[(100 + p)/100]$. For very small p s, the quantity is approximately $\beta/100$.
16. For reference, the standard deviation in turnout among women in this sample is about 5 percentage points.
17. However, these results run contrary to recent responses to Ross (2008) that show evidence that controlling for culture eliminates the resource curse (Norris, 2014). One explanation for the diverging results is that they draw from entirely different cases. It is possible, for instance, that the cultural differences across the states are smaller than those across countries such that when culture is accounted for in this study, there still remains a sizable role for resource wealth to play. Understanding why mine and Ross's results diverge from others is an important area for future research.
18. A note about the robustness of these results: As discussed in the "Sample" section, it is possible that resource production is endogenous. Models 1 to 6 address this concern by using lagged levels of the resource variable, but this may be insufficient. As such, in robustness checks, I instrumented for the mining variable in Models 1 to 6 with a measure of the number of coal mines in the state i in 1985. (These data come from the U.S. Energy Information Administration.) The logic for this variable as an instrument is that the geology of resource production means that a state that produced much resource wealth in the past (as evidenced by the number of coal mines) is likely to produce much resource wealth during the period covered in this study. That said, with respect to the three dependent variables of interest in this article, the geology that makes a state resource abundant (and thus encourages the digging of coal mines) is distributed in a manner as good as random. The results of the instrumental regression model continue to show evidence of a gendered natural resource curse. The results in Table 1 are robust to other model specifications as well. Specifically, one might wonder whether controlling for the female population is useful given that it is also the denominator of the dependent variable in the labor force and turnout models. I am happy to report that the results do not depend on the inclusion of this variable. I thank an anonymous reviewer for encouraging me to address these issues. All of these results are available in the online appendix.

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19. For instance, production in the Niobrara shale play has increased from about 365,000 barrels in 2010 to about 3.5 million barrels in 2013. These figures come from Soape and Strahn, writing for the *Oil and Gas Monitor* (Soape & Strahn, 2014).
20. Notes about this and the bottom two graphs in the figure: I have smoothed the trends in labor force participation, voter turnout, and female legislators to get a better sense of the time-series trends. In addition, using lowess for the turnout rate trend helps to smooth the differences in turnout between president-year and midterm elections. The voter turnout variable in this figure imputes turnout levels in years where there was neither a presidential or midterm election with turnout levels from the most recently held election.
21. These were 2005 (seat share 14.4%), 2006 (15.6%), 2011 (14.4%), and 2012 (15.6%). The 14.4% seat share is the lowest in the state.
22. Along with the previous 4 years, in 2009 and 2010, women held only 16.7%.
23. Time-series models for the Wyoming case confirm what these graphs suggest. Dynamic models for the period 1997 to 2012 yield a negative and statistically significant coefficient on resource wealth when the dependent variable is either the labor force participation rate or the female voter turnout rate. In the female seat share variable, the coefficient is negative but not significant. This null effect owes entirely to outlying observations in 2007 and 2008, however. When those years are excluded from the sample, the coefficient on resource wealth is negative and statistically significant. These results are available in the online appendix.
24. The joint significance referred to here is a Wald test on the two coefficients.
25. These are Delaware and Maryland. It is not very surprising that these two states do not fit the general trend as they are often not considered to be "southern."
26. The three states are West Virginia, Texas, and Louisiana.
27. See Goldberg et al. (2008) for more evidence of resource curses in the United States.
28. Because the strict exogeneity assumptions of the random effects estimator often go unfulfilled in political economy applications, we should treat these results cautiously.
29. Delaware was also an outlier in the cross-sectional results, but excluding it only strengthened the reported results.
30. Modeling well the dynamics of turnout is impeded because turnout can only occur in election years. To deal with this issue, I impute the turnout rate in non-election years according to the most recently held election.

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