

Oil-based economies do not necessarily drive women out of the labour market

*There are large differences in the labor force participation rate of women compared with men across the world. Many commentators suggest that in some countries, this is due to the importance of extractive industries such as oil mining, which tend to be biased towards male employment. Using data from the early 20th century oil boom in the American South, **Stephan Maurer** and **Andrei Potlogea** find that the female labour force participation rate and the employment rate are largely unaffected in a county after oil is discovered, and that the same is true for the average numbers of hours that women work. They write that this may be due to an expanding service sector associated with a growing oil mining industry, which can be an important employer for women, as well as increasing average wages across both genders.*



Across the globe, the differences in female labour market involvement from that of men are vast. In 2005, for example, female labour force [participation rates](#) stood at 68 percent in the United States, at 53 percent in Indonesia, and at less than 20 percent in Saudi Arabia. These differences are quite consequential- increasing female labour force participation could have substantial [growth implications](#) for economies as a whole, and previous research has also shown that women individually enjoy substantial benefits when gainfully employed. Understanding what influences different levels of female labour force participation is thus very important.

One explanation that has been put forward to account for these large differences is the presence of mineral resources (in particular oil) and the resulting economic structure that prevails in some countries. There are good reasons why the presence of a large oil sector might depress women's labour market prospects: Oil extraction itself is typically a sector that employs notably more men than women, and the same holds for many closely linked industries, all of which potentially leads to greater demand and thus more jobs and higher wages available for men. In addition, higher male wages might make female partners more likely to stay out of the labour market, as a couple can more easily "make do" with just one salary. Indeed, [previous empirical research](#) has uncovered a significant negative correlation between oil production and female labour market involvement. However, is this relationship causal? And what are the mechanisms at play?

To assess this, we went back in history and analysed the effects of [local oil booms in the South-western United States](#) between 1900 and 1940. As Figure 1 illustrates, during this time, large oil fields were discovered in many counties in Texas, Louisiana, Oklahoma and adjacent states. In order to estimate the effect of the resulting local oil booms on women's labour market outcomes, we compared their evolution in counties with major oil deposits before and after these deposits were discovered to the evolution in counties without oil fields over the same time. This so-called "difference-in-differences" strategy allows us to cleanly identify the effect of oil discoveries on our variables of interest. By focussing only on counties from one region in the US, we have the additional advantage of only comparing geographical units with similar legal frameworks and institutions, removing further sources of bias.

Figure 1 – Oil abundance in the South-western United States, 1910 (top) and 1940 (bottom):

Note: Counties with discovered major oil fields in black, their neighbours in grey. Source: Authors, based on county shapefiles from [NHGIS](#).

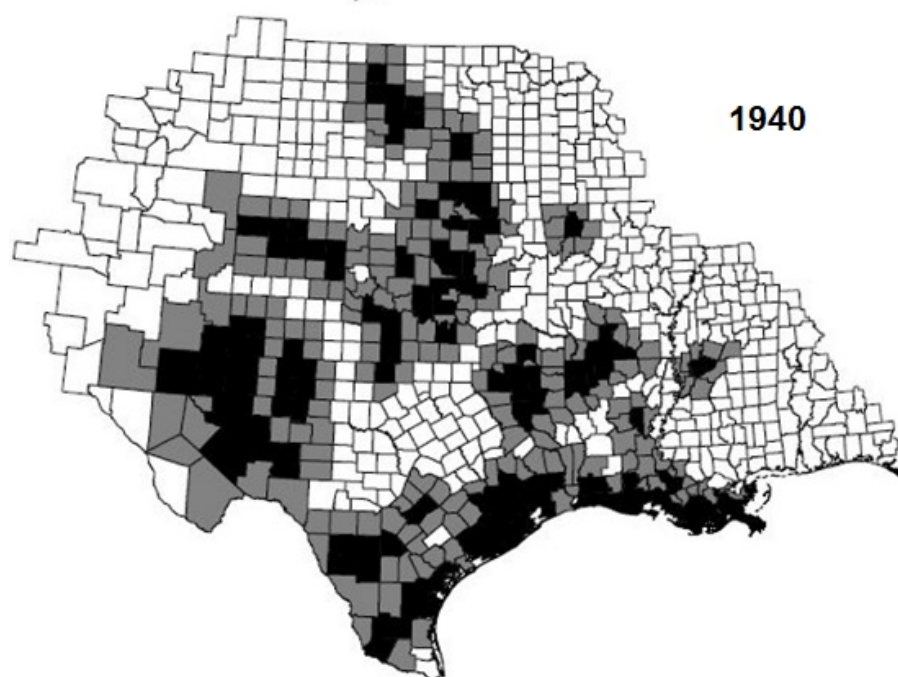
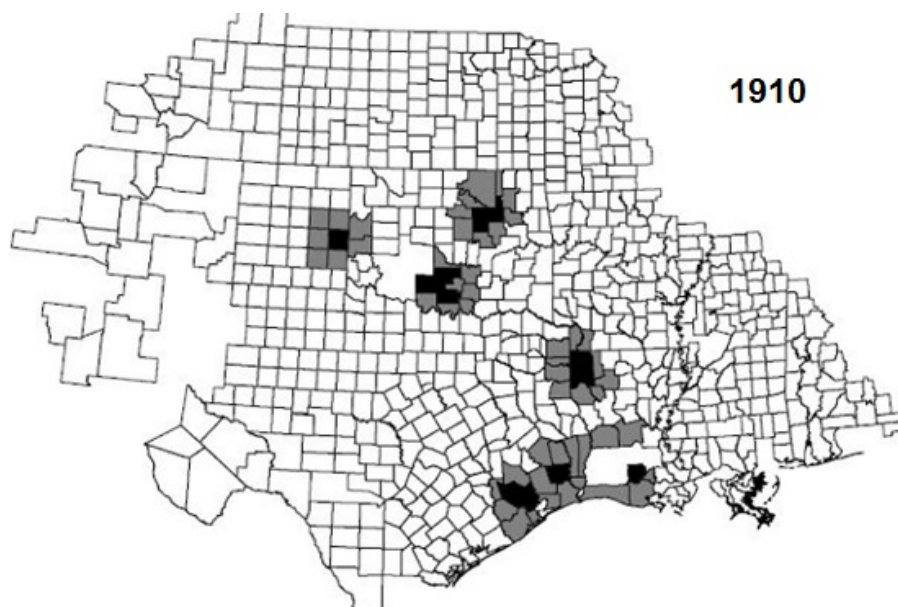
Perhaps surprisingly, we did not find any evidence for a negative effect of oil per se on women's labour market prospects. Neither the female labour force participation rate, nor the female employment rate change significantly in a county after oil discovery, and the same is true for the average numbers of hours that women work. What can explain this absence of an effect in spite of a boom in a male-biased industry? In our study, we find two potential mechanisms at play.

Firstly, the local boom that ensues after an oil discovery does not stop with oil mining. The county as a whole starts to develop: More and more workers are attracted to the county; population grows, becomes younger on average and moves increasingly to urban areas and out of agriculture. The oil mining industry supplies cheap oil and demands goods and services, which leads to growth in the manufacturing and service sectors. The growth of services seems to be particularly consequential in our case,

as they turn out to be important employers of women. Thus, as men move from agriculture to work on oil fields and in factories, women do not exit the labour force, but rather increasingly flock to newly created service jobs. In fact, we find that the importance of the service sector for female workers grows by nearly as much as the importance of the oil mining sector grows for male workers. Thus, the initial growth induced by oil discoveries leads to further demand-side changes that are, if anything, female-biased and balance out, at least in part, the initial male-biased labour demand shock brought about by the growth of oil mining.

Secondly, some of the absence of a labour force participation effect might also be explained by wage adjustments. While women do not lose ground in terms of labour force participation, we do find that the gender pay gap widens substantially in oil rich counties. Average wages for both men and women increase, but much more so for the former. So while oil does not crowd women out of the labour market, it does seem to negatively impact the relative quality of the jobs performed by women.

Taken all together, our study shows that oil abundance by itself is unlikely to be an explanation for the large cross-country differences in female labour force participation. If other sectors expand as well as a reaction to oil booms, women might not be driven out of the labour market at all. The existence of such sectors and their openness towards women thus are a crucial determinant in whether the initial male-biased shock associated with an oil boom will actually end up hurting women's job prospects. However, as our wage findings show, this does not mean that women's relative position in the labour market is unchanged.



This article is based on the CEP Discussion Paper ‘[Fueling the Gender Gap? Oil and Women’s Labor and Marriage Market Outcomes](#)’.

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