**Conversation with Energy Economist, Stratford Douglas**
**By Grace Chow '17**

People blame rural voters, including coal mining Americans, for the current state of US politics. President Trump promised, both during his campaign and now, to bring coal mining jobs back to the US and end the war on coal. The first step to fulfilling his goal is dismantling Obama's Clean Power Plan, mandated by the Environmental Protection Agency, which caps emission and air pollution in the energy sector. Stratford Douglas, Associate Economics Professor at West Virginia University and former economist at the Federal Energy Regulatory Commission, explains the decline of the coal industry through a different narrative: one independent of politics and less optimistic than that of President Trump.

Douglas co-authored "Coal Mining and the Resource Curse in the Eastern United States," in the *Journal of Regional Science*. The term, resource curse, often used to describe what happens in developing nations such as Nigeria and Venezuela, dictates that the wealth of resources in an area can harm the economic well being of its people. Douglas found that Appalachian counties more heavily dependent on the coal industry were associated with slower personal income growth by 5 percent compared to regions less reliant on coal in their local economy. Appalachian counties provided the perfect setup for a natural experiment as the demographic makeup and other characteristics of the counties were roughly the same except for the presence of coal industry jobs.

Douglas points out that this trend is evident even beyond the numbers. "I've spent a lot of time driving around [in both coal mining and non-coal mining counties] and the differences are obvious. Signs of poverty are everywhere in the coal mining regions. It's not a rich region in general, but in the coal mining region you can see poverty without going to data." Douglas, a West Virginian resident for two decades, was only surprised by the robustness of his findings in that regardless of how many factors they took into account, the significant difference in economic growth between coal and non-coal mining communities remained. The conclusion is simple: coal mining regions suffer from a stunt in economic growth.

The simple economic concepts of competition and productivity provide the explanation for the decline in the coal industry as a whole. The all-time low price of natural gas and the rise in affordability of renewable resources such as wind and solar power mean that coal faces much competition. Because of the low cost of producing natural gas, natural gas-fired power plants will be built instead of coal powered plants. Douglas says that even if the US reverted to the environment regulations of the 1980s, the effect of natural gas prices would still overwhelm the impact of less stringent emission regulations. Coal mines in the Appalachian region face a second facet of competition: mines in the West, specifically Wyoming and North Dakota. Mines in the West are 10 times more productive and can undersell coal mined in Appalachia.

Second culprit: automation. Employment in the coal industry peaked in the 1920s and has steadily declined since the 1980s. Similar to most industries, machines and technology replaced human capital. Automation has led to safer conditions for workers, cheaper costs, and higher productivity, as did innovation in other industries. The effects of competition and automation on coal jobs would have occurred regardless of emission regulation.

During the election, President Trump's rhetoric of reviving coal mining regions gave voice to Americans written off as "irrelevant." Douglas further explains that history runs much deeper in these areas. "The coal miner is to West Virginia as the cowboy is to Texas. It's deep in the culture and something people don't want to let go of. Any perceived attack on it causes a closing of ranks and it hits them where they live."

President Trump's executive order could leave both the coal miners and their counties worse off, in the short and long runs. In the short-run, Douglas believes that repealing the Clean Power Plan will stabilize the decline in the coal industry by slowing down plant closures, allowing them to stay afloat for a bit longer. Plant closures are inevitable unless the government builds coal-burning power plants, "...but I wouldn't it past them…" Douglas jokes.

In the end, Trump's executive order could further stunt economic diversification and only perpetuate the resource course. If pollution from power plants continues or increases, the Appalachian region will become even less attractive for industries such as software and

technology — the industries that will fuel US economic growth. Jobs in these industries require high levels of education but coal mining counties are often the same areas that do not encourage education attainment. Coal mining Appalachia will only be left even further behind.

The takeaway? Douglas says, “It’s going to be some time before we find a way out of the hole we’ve been placed in from our history.” When asked how to offer hope to coal miners in these declining counties, Douglas says it’s “a hard sell.” With the Republican push to repeal the Affordable Care Act, coal miners, employed or unemployed, can no longer bank on healthcare provisions through Medicaid. There is not pretty way to put it, but “...these places are in for some extended hard times,” whether or not President Trump acknowledges it. Rather than hold on to the promise of “C’mon fellas...you’re going back to work,” we need to face the reality that these jobs are not coming back regardless of how someone chooses to explain the war on coal.