

Hello and welcome to my presentation, today I will be going over my independent study that I have been working on the past semester with Dr. Greenlaw. The question for this study is to what extent does increasing minimum wage affect fast food employment.

For this study I defined fast food employees as; dishwashers, fast food cooks, and food prep and service staff. This study uses nationwide data, state specific, from 2016-2018 then using regression analysis on this data to find which one of the variables is statistically significant. In essence, to answer does minimum wage increase or decrease employment.

This map was created by business insider using bureau of labor statistics data from 2017 that showed the lowest average paid jobs for each state. There are a lot of different ones but some that stuck out to me were a lot of food related ones, especially fast food cooks, dishwashers, and food prep and serving staff. Because of this, it led me to believe that a majority of the three categories that I defined as fast food employment, would be paid minimum wage. Meaning that it is the best indicator to show how minimum wage truly effects those earning minimum wage.

So whats the importance of minimum wage? For me I believe it is a reflection of our society. It is the legal lowest amount that we are allowed to pay someone per hour, given quite a few exceptions but that is across the board the lowest amount. As of right now according to the bureau of labor statistics that is about 2 percent of the work force, which I will say is not that much. But according to NELP in 2015 they found that % of the workforce earned \$15 or less. The reason for this is the current minimum wage debate is mainly about increasing minimum wage across the board or having each state have a living wage which is accounted for each state using different factors. So, if we were to increase minimum wage to \$15 across every state this % would be effected which is why it is important to know if increasing minimum wage would lead to an increase or decrease in employment, or no change at all.

So now into the literature. These are four studies that also looked at how minimum wage affects fast food employment and each almost found a different answer the main three are no effect, increase employment, or decreased employment. The first and most impactful I found was Card and Krueger in 1993. The importance of this was from it using fast food establishments on the border of new jersey and pennsylvania when New Jersey had a minimum wage increase they found that there was no effect on employment of fast food workers. This is very impactful mainly because the leading theory at the time was the micro theory which stipulates that having a binding price floor or minimum wage would increase unemployment since there is no other change happening in the equation this goes directly against that showing no effect which especially since there is a comparison state in comparison establishments was very very impactful. Dube in 2007 found the same results except only in San Francisco over a few years so it was not as strong as card and Krueger. the next is increased employment which was Krueger and Katz in 92 and I know what you're thinking I just said card and Krueger is really impactful with no effect how is Krueger and cats not impactful with increased employment and the main reason for this is it was looking at a single state Texas and there was also a sub minimum youth wage that was implemented that about 5% of the restaurants that they looked at

put into effect so not as strong since there's no comparison and there was a even lower wage which could account for the increase in employment. Lastly was Newmark and washer in 92 which was decreased employment which follows completely in line with the micro theory the real impact of this study is nationwide looking at every state and it found that there was a decreased employment across the board which as I said completely lines up with the micro Theory all in all the literature is pretty torn there's no real answer to how minimum wage affects fast-food employment one thing that a lot of studies did find in common was a decrease in the wage gap or compression of the wage rates which not as important but kind of cool that although the effects were different they still almost all agreed on this.

So, what are some possible variables that can affect fast-food employment. Well, of course minimum wage that affects both demand and supply since wage rates are taken into account by both employer and employee. So on to some other demand unions not as common for fast-food employees but unions have helped employees gain workers rights increased wages in other words they hassle the employer and cost them a lot of money because of this anyone that is a part of a union may be seen as more expensive than someone that is not. I was not able to find any fast-food worker unions at least state-by-state so I was not able to account for this variable. The next is demand for minimum wage products this comes into play for the profit of these given industries and given establishments if there is no demand for the product they will not be able to make much more profit and if there is little demand and an increase in minimum wage that will lead to lower profits than before at leading to well honestly it could be any given demand but if it does not shift this will lead to unemployment which is a theory I'll go into in a second. This is very hard to account for mainly because you would have to look at each individual fast-food restaurant and then look at it state by state since I'm doing comparison across all states and District of Columbia so I was not able to account for this. Lastly is state GDP the main theory behind this is if there is more money in that area then there is more money being spent more demand for products therefore more jobs. I was able to account for this pretty easily using Bureau of Labor Statistics data for 2016 all the way to 2018 for each one of the states. now on to the supply-side. High school graduation rates are very important since it is a good indicator of how much unskilled labor there is in a given state. I was only able to find 2017 data not all three years so is not as good of an indicator since it does not change throughout the three years which does come into play later. Lastly is population the main thinking behind this is just there's more people more spending and also just you know more people to work honestly. so yeah.

Now into the theory. the first theory that we're looking at is the micro theory that I've talked about before. very simple looking at a single firm or business. It mainly says that a binding price floor which simply means a price floor that is above the equilibrium meaning that it would shift everything up will lead to unemployment if there is nothing else happening. the reason for this is the gap between supply and demand. this is the demand for labor and the supply of labor if there is not as much demand as supply then there are going to be people that are out of work. now on to the macro theory which is what I'm mainly testing. This takes that exact same micro theory and takes it one step further and also looks at every firm in an economy as opposed to just a single one which leads to very big changes. So, building off the last one increase in

wages for minimum-wage employees this then takes that increase and shows it is going to be spent on more things since usually when people make more money they spend more money. This then turns into more profit for these minimum wage corporations showing an increase in demand for their product shown in this graph by a shift in the right of the demand curve. Showing an equilibrium on this binding price floor leading to no unemployment there's no gap between supply and demand therefore no unemployment of course there is a possibility that it does not shift all the way to the right. Which in that case it would lead to less employment or less unemployment than before.

Now on to the econometric model that will be used for the regression analysis. On the left is the dependent variable which is just fast-food employment which is broken up into dishwashers fast-food cooks and food prep and serving staff. On the right are all the independent variables we have minimum wage of course very important. The minimum wage dummy variable is a simple way to put it as like a light switch it's either on or off in terms of if that state changed its minimum wage that year or if it didn't and so that is also very important since we were looking at specific changes in minimum wage leading to the different employment of minimum-wage workers. And then of course population GDP graduation rates and the error term of course

So now on to the expected values for each one of these variables. The first minimum wage since we are going off the macro we are actually expecting zero we are expecting none which is because we are expecting no change in employment due to a change in minimum wage. That is also the same for the minimum wage dummy variable since they are both linked in that way. Next we're going to look at population and GDP. Both we think are positive due to the theory and that is just based off what I said before more people more supply of people work, more money more consumption more jobs. Now on graduation rates it's actually going to be a flip and we are going to be looking for it to be negative because an increase in graduation rates will actually lead to less unskilled labor which is what we would need for fast food jobs.

Here is the actual regression first thing to look at is the R squared which is on the top left hand corner this 0.4 which is 40% which is how much this equation accounts for their variation and the different observations. 40% is it's so-so nothing too exciting. Next we should look at the minimum wage dummy and the graduation rates the importance of these is that they were omitted and there is a reason for this. Graduation rates as I said before or just 2017 data which I then expanded to all three years so there was no change. This coupled with the minimum wage dummy variable, also tending to be either completely on or completely off since most states either change it frequently that change their minimum wage frequently or do not change it at all, led both of these along with the observations to have the same number leading to collinearity so it was omitted by the program. Next, for the three variables that are left, GDP population and minimum wage. First to look at the T values GDP and population have above 2 or above or below negative 2 for below and above 2 for positive. Meaning that they are statistically significant so they are 95% sure that they are not 0 which is pretty good. But minimum wage is not statistically significant so we should view that as 0. So that brings us into our conclusions. As I said population was positive and significant and this lines exactly up with

the theory. Mainly because we expect that more people in an area will lead to a higher supply of jobs leading to more jobs in general that works out completely fine. GDP was negative which actually goes against our theory for this and there is a possible explanation for this even though at first it may not make sense. The possible explanation is the wealthier an area the less likely they are to have cheaper food options more likely for them to have higher-end places steak houses places for fine wine stuff like that not something you're gonna find at McDonald's. So, although it does not line up specifically with the theory it does make sense in the end but minimum wage not being statistically significant actually proves the hypothesis of this since we were looking for to be none for it to be zero since the macro theory stipulates that there is no change in minimum wage. So, although this is not this is um this isn't a statistically significant variable it still goes to prove that increasing minimum wage would not increase unemployment. which is the exact findings I wanted to find with this study and yeah given that I think this was a really good study for me in general just a lot of fun, glad to work with dr. greenlaw. On to my work cited for the different figures and maps in the presentation and thank you for your time.