



## Better Quantifying the Minimum Wage Impact

The highly polarised \$15 minimum wage debate in the US, is not shining a good light on the economics profession, or the Congressional Budget Office. Those against raising the wage use simplified Econ 101 labor supply and demand arguments, and cite studies that conclude there will be job losses. Those in favor argue that the stimulus of higher wages will be a positive to demand, and cite studies that show no job losses.

Perversely, pro-minimum wage economists treat any automation driven job losses as both inevitable and a positive for productivity, while those preferring to leave it to the market cite their concern that accelerated automation will hurt those low wage workers that a rising minimum wage is meant to help. Arguments are too often ideological, unsubstantiated, and perhaps unsurprisingly for an industry that aspires to be considered a science, stuck in a backward-looking search for precedent. What the “debate” around the impact on jobs is failing to incorporate is an understanding of the math and motivations that drive forward looking decisions for businesses. Simply looking at employment outcomes from past periods of minimum wage increases will not do. Rather the debate should be focused on the revenue and cost lines of a typical minimum wage payer, the implied price increases that will be required to compensate, and quantification of the elasticity of consumer demand in response to those price rises.

The Congressional Budget Office doesn't get its own hint when it argues that minimum wage driven healthcare inflation will have a sizeable negative impact on the federal budget. In that case the CBO acknowledges costs will be passed on to the (federal) consumer. Yet in deciding that 1.4mn jobs will be lost – it does not even bother to try to quantify the scope for consumers to absorb this extra cost for employers. Rookie mistake (and as an aside, it should probably be the Fed that weighs in on inflation ramifications).

From budding free market economists to Nobel laureates, these are the crucial questions you need to answer:

1. What will happen to the annual cost base of small enterprises that pay the minimum wage?
2. What does this mean in terms of required prices increases or cost reductions?
3. What is the elasticity of demand from sales prices increases of this magnitude?

### Quantifying the Cost Impact on Restaurants

First divorce the political symbolism of \$15 and focus on the proposed minimum wage increases in each successive year. The path from \$7.25 to \$15 is proposed through 5 annual rises until 2025. Companies will not go bust just because costs are due to rise next year, they will go bust because costs have risen this year. The question is how much adjustment to consumer pricing (or costs) will companies have to address each year? As the proposal stands, we are facing a 31.0% rise in the minimum wage from \$7.25 to \$9.50 in 2021. That will then be followed by a 15.8% rise to \$11 in 2022, a 13.6% rise to \$12.50 in 2023, a 12.0% rise to \$14 in 2024, and lastly a 7.1% to \$15 in 2025. Or put in market speak, **the minimum wage will rise at a compound annual growth rate of 15.6% per year until 2025.** Yes it ultimately more than doubles, but this is in 15.6% increments.

Second, how much of the cost base will be impacted by these annual raises in minimum wage? For this we need to know what % of revenues labor costs account for, and how much of those labor costs will be directly impacted by the minimum wage hikes (any follow-on hikes of higher paid staff assumes the economy is strong enough to have excess demand for labor, and the business can afford to pay – meaning wage inflation beyond the minimum wage should not be a determinant of job losses). Naturally this requires granular analysis of a number of industries, but restaurants/bars/food services sectors are a good place to start. Across the US just over 60% of minimum wage workers are in leisure and hospitality. Additionally, food service businesses are primarily discretionary spend driven, and under considerable pressure due to Covid restrictions with millions of jobs lost-hence are most vulnerable to a rising cost base.

In normal economic times, a restaurant will have labor costs that equate to 25-40% of sales. Lower service/lower cost restaurants, where the consumer is most price sensitive and hence are arguably more at risk, would tend to be at the low end of that range.

### Quantifying the Impact on Menu Prices

In year 1 the minimum wage rise will be 31% from \$7.25 to \$9.50. If every single restaurant employed only minimum wage employees, the year one rise in wage costs would also be 31%, but the rise in overall costs would be the equivalent to 10.85% of revenues assuming labor was 35% of revenues (31% x 35%). However, for restaurants with an overwhelming minimum wage cost base then it is likely labor is closer to 30% of sales. Accordingly, **in this worst-case scenario overall restaurant costs would rise by no more than 9.3% due to**

**the minimum wage increase in 2021.** The practical reality is few restaurants employ only minimum wage employees. Indeed, the CBO in 2019 estimated that in a rise in the minimum wage from \$7.25 to \$10 by 2025 would only directly impact 1.5mn workers resulting in an average wage increase of 7%. If we back out the 3.5% nominal rise in wages that the CBO assumed over the period, this implies that the average wage of those impacted would currently be \$8.10. As such, the rise from \$8.10 to \$9.50 in 2021 would mean a 17.3% wage hike for a restaurant with a low wage employee base in 2021.

If every one of these 1.5mn sub-\$10 impacted workers the CBO identifies worked in the restaurant industry, this would only equate to just under 10% of the 15.6mn workforce in the nationwide restaurant industry. As we should allocate 60% of that 1.5mn to leisure & hospitality, this would mean a maximum 900,000 individuals working in restaurants would benefit from the \$9.50 minimum wage. Accordingly, the first-year minimum wage increase to \$9.50 would only impact 5.8% of the entire restaurant industry labor-force across the country. As these workers are lower paid than average, it is safe to assume that they get paid at a discount to the average employee which can be assumed to be 20%. When thinking about wage costs rather than employee numbers, a safe estimate is that **4.6% of the overall restaurant industry wage bill will be impacted from the rise to \$9.50.** For the industry as a whole, 4.6% of the nationwide restaurant workforce would see an average 17.3% rise in wages, with the rest not directly impacted by a \$9.50 minimum wage.

#### *Nationwide, a \$9.50 minimum wage would raise restaurant labor costs just 0.8%*

Allocating the 17.3% rise to 4.6% of the labor bill would mean that the minimum wage impact on labor costs would equate to a first year rise of just 0.8%. Naturally, to maintain wages at 35% of revenues, menu prices would need to rise by 0.8%. But **for a business to maintain the exact same \$ profitability (as opposed to profit margin), they would need to raise their menu prices by just 0.3% due to the minimum wage hike alone.** To the extent the CBO forecasts are correct, the proposed 31% rise in the 2021 minimum wage is fairly immaterial in a nationwide context.

#### *What would it mean for restaurants in the most affected states?*

Naturally though the impact would be concentrated in states that currently have minimum wages lower than \$10. These states account for 39% of all food service workers in which case we should compare the 900,000 of impacted employees with the 6.1mn restaurant workers in those states. This would equate to 14.8% of the restaurant workforce or, adjusted for a 20% lower than average wage, 11.8% of the restaurant wage bill in those states. So, in the specific impacted states, the rise in labor costs from the minimum wage increase would be 2.0% (11.8% x 17.3%). Again, to sustain profit margins that means a 2.0% rise in menu prices (excluding other inflationary pressures), but it is not obvious that we should expect higher costs should equate to higher profits. For a restaurant in those states to simply maintain the same \$ level of profitability? The overall menu price rise would need to be just 0.7%.

As mentioned, in the case of restaurants that only employ \$7.25 workers, overall costs would rise by the equivalent of 9.3% of sales. While some might say they needed to maintain margins hence a 31% menu price rise would be required, it is a bit generous to assume that a restaurant's response to a higher minimum wage would be to raise absolute profitability by 31%. The simple reality is that this would raise labor as a % of overall costs. To sustain the \$ profitability to run the business (which is the pre-requisite for non-corporate restaurant to pass on the price rise), **the menu price rise of 9.3% would suffice in even the worst-case scenario of a restaurant that currently employs everyone at \$7.25 an hour.**

#### *Worst Case a 9.3% menu rise for 100% minimum wage employers in 2021.*

A 9.3% menu price rise would nonetheless be a challenge as a \$1 menu item would be priced at \$1.09 (pre-sales taxes of course). If the state wanted to lessen the blow in this worst-case scenario, they could always tweak sales taxes until it was clear that consumer demand was being sustained. However, it is possible or indeed likely that a restaurant would seek to consolidate its cost base (and for those with capital to invest to automate more). What would the likely split between revenues and costs be? As all restaurants in the area would be raising prices by 2%, the marginal difference for these fully minimum wage restaurants would be 7 percentage points. Keeping in mind that every direct peer would have similar cost pressure, then there would be little loss of competitive advantage by raising prices fully to compensate (again with the question being: what will it mean for consumer demand elasticity?). Still, if half of the difference was absorbed by cost cuts rather than price rises, that would imply an overall reduction in costs of 3.5%. Assuming all costs are cut equally, and a profit margin is maintained, this would mean 1 in perhaps 20-25 jobs in these worst affected restaurants would be at risk. As that is an entirely manageable cost reduction, this is more likely to be an issue of individual jobs at risk, rather than bankruptcies driven by the cost increases. Based on the CBO's analysis that 1.5mn jobs will be impacted by the move to \$9.50 – **that would mean circa 60,000 jobs could be at risk from the move to \$9.50.** The risk to restaurants is unlikely to be the first 31% rise in the minimum wage, rather it is the risk to revenues from the pandemic and knock-on effects to consumer demand. And of course, for those that lose their jobs, when they do find a new job, it will be at the higher minimum wage.

### *The restaurant macro double check - \$9.50 = 0.5% restaurant inflation in 2021*

For some added support to the conclusion that the move to \$9.50 will be immaterial nationally, we can look at the change to the overall industry wage bill based on the CBO forecast that 1.5mn workers will benefit to the tune of an average 17.3% rise. This means that in a year the annual salary of those workers would rise from \$16,848 to \$19,760. In total that equates to \$4.37bn of extra cost for the restaurant industry. If we compare that the pre-Covid estimate \$899bn of restaurant sales for 2020, that would have equated to just 0.5% of industry sales. For some perspective, if we think about the 320mn prospective restaurant consumers in the market, that equates to incremental per capita restaurant spend of \$13.4 over the course of year. Of course, revenue and employee numbers have fallen due to Covid. As revenues are the greater threat to a business than cost increases associated with the first tranche of the minimum wage, it is prudent to only institutionalise that hike once there is clarity and upside to industry revenues. Using restaurants as a guide, a 0.5% increase in the most impacted low margin sector that accounts for less than 7% of the CPI basket does not seem overly worrisome when thinking about overall inflation ramifications.

### *If \$9.50 not a challenge...but what about subsequent years?*

In subsequent years, granular calculations to adjust for those already making higher wages in the restaurant industry could still be made. However, with the higher base of \$9.50 capturing a wider degree of the low-wage earning restaurant employee base, let us take a conservative worst-case assumption that subsequent minimum wage rises impact the entirety of the restaurant labor-force at every restaurant. As the 2021 rise is immaterial, we continue to assume the base is that labor is 35% of revenues at the end of 2021. Labor's contribution to total costs then rises in each successive year as the independent restaurant's threshold should be sustaining \$ profit, rather than profit margins. This would mean:

- **2022 15.8% minimum wage hike:** would require a **5.5% rise in menu prices** (15.8% x 35%). In this scenario labor would end the year at 38.4% of revenues.
- **2023 13.6% minimum wage hike:** would require a **5.2% rise in menu prices** (13.6% x 38.4%). In this scenario labor would end the year at 41.5% of revenues.
- **2024 12.0% minimum wage hike:** would require a **5.0% rise in menu prices** (12% x 41.5%) with labor ending the year at 44.3% of revenues
- **2025 7.0% minimum wage hike:** would require **3.0% rise in menu prices** (7.0% x 44.3%) with labor ending the year at 46% of total revenues.

Note the above are nominal price increases. Were there an additional 2% rise in menu prices a year associated with general inflation, this would reduce the rise of labor as a % of total costs. If labor is currently 35% of costs, adjusting for 2% underlying menu inflation would mean labor ends 2025 at 42% of overall costs. Keep in mind this assumes that 100% of all workers would fully benefit from the rise from \$9.50-\$15.0. As the CBO thinks only 17mn workers in the entire economy will be impacted by the move to \$15, it is more likely that in restaurants, no more than two-thirds of workers were full beneficiaries of the minimum wage hike. Include an underlying 2% inflation trend, then labor costs for a business that started with labor at 35% of sales today, would remain in the upper 30s in 2025.

These are material changes in prices, but even when assuming 100% of employees benefit in the hikes from year 2 to year 5, **the compound annual growth in required menu prices through to 2025 would be 5.7%.**

### *Labor economists should be studying demand elasticity to menu price rises, not job losses*

Beyond business with flawed models, on their own wage hikes of this magnitude are unlikely to be the drivers of insolvency among small businesses. The key question economists should be answering is what would the demand elasticity be to menu price rises of that magnitude? Should there be periods of tax rises or minimum wage hikes that caused all prices to rise, these should be studied not to see happened to labor, but what happened to overall demand for restaurant spend and hence the industry's ability to pass on universal price increases. Labor economists, please take note.

### *The pandemic could soon present an opportunity to raise the minimum wage*

In the midst of this pandemic that is causing serious revenue pressure on virtually all restaurants, now is definitively not the right time to raise the minimum wage (it is weak revenues rather than rising costs that are usually the driver of bankruptcies). However unlike in a normal environment where revenue elasticity could disappoint, when we come out of this pandemic the considerable scale of pent-up demand, coupled with the sharp rising in savings, will likely create a crush of demand for restaurants. The scale of the demand uplift will likely be less price elastic than historically. With rising demand coupled with consumer awareness of the cost pressures restaurants face, the window for consumer tolerance of menu price inflation due to minimum wage increases could be high. While restaurants might not be the tobacco industry, it is worthy of note that when tobacco taxes rise, manufacturers tend to raise consumer prices beyond that justified by the tax hike – creating windfall profits due to low demand elasticity. If the minimum wage hike is timed to correspond to the post vaccine

re-opening, it is very possible that the restaurant industry will find their pricing power more than compensates for the minimum wage increases - especially as the reality of year-one cost pressure will be low.

## Appendix: Policy Proposals to Find Middle Ground

**Create an Independent Committee.** One way to remove economic risks from minimum wage hikes is to create an independent review committee will act as a safety valve and annually sign off on the increments in the minimum wage as per the law, or delay the hikes if jobs are being lost, small businesses going under at a high rate, the rises are inflationary etc. Once the new equilibrium is reached, they will annually hike the minimum wage by CPI unless there are economic/job market reasons to keep the wage flat in a given year. They can also have a mandate to shrink the gap between the training wage (proposed below) and the formal minimum wage. Their independence would only be to cyclically delay pre agreed hikes, not to set minimum wages in their own right.

**Resolving the One Size Fits All Minimum Wage:** A lot of the pushback is "\$15 might be ok for San Francisco but not for Birmingham." To address this, create a mechanism that a minimum wage committee will monitor to allow for adjustments. Currently the minimum wage in the US is, as % of median wages, the lowest in the OECD. However, under the proposed rises it no longer will be. If \$15 is more than 65/70/75% of the median wage in that state, then the committee will cap the federal minimum wage in line with that federally mandated threshold (this cap will automatically rise in line with growth in median wages in that state until it reaches the full federal minimum wage). To make sure the regional cap is not too low, require that the lowest quartile 1 bed rents in a region never exceeded 55/60% of the minimum wage. Note states could always raise their minimum wage further, but this would ensure that a lower income state's minimum wage would not be out of kilter with its underlying economic realities, either on the downside or the upside. This technocratic approach could also help those states remain competitive in attracting investment should the minimum wage rise nationally to the extent that more manufacturing jobs are impacted.

**Resolving the "This will hurt teenage/student untrained entry level workers"** There are widely articulated concerns about entry level workers being displaced from minimum wage hikes. To resolve this, allow for 3 months at a reduced trial/training wage for those under 21, those who are long term unemployed, or for those with criminal records. This will allow for summer jobs at that lower wage, or for a cumulative of 3-months work during the year (i.e. weekend work for students), and for training for those that enter the workforce at a young age (or ex-convicts or long term unemployed at any age). This time limit will reduce the likelihood that younger workers displace older workers as the employer will have to take the costly decision of replacing a then trained worker after the training period is over. At the same time this will give a lifeline to businesses that may struggle to survive at the higher minimum wage. They would be able to sustain lower wages in exchange for high turnover. In a poor economy that will be useful, in a strong economy - the market will minimise this risk. While this mechanism currently exists, it is rarely used. However, with the scale of the proposed minimum wage rise, it would be prudent to retain this safety valve initially. The proposed committee would monitor this wage gap and make upward adjustments to close the gap if necessary.

**Protect small business:** Any company that can afford to retool will by definition not be at risk of bankruptcy, so this may only accelerate the shift away from jobs that pay too little for humans but not cause bankruptcy driven job losses. If the outcome of this is more investment in automation, that's ultimately a positive for US competitiveness. The bigger challenge is how to save already struggling small enterprises that can't afford this hike. One way to deal with this is to push the higher minimum wage through for all companies that employ more than 10/25/or 50 people, chains of more than 1/2/3 stores or restaurants etc and to require that all large companies and contract suppliers pay the new minimum wage. Giving this competitive advantage to small business over a 1-year lag for each successive minimum wage increase will give them time and excess profit to invest to improve their competitive position.

**Smooth the rise:** It is probably best to smooth out the rise after year one. As it stands now the lowest % rise is in the final year. A smoother route to \$15 would be \$9.5, \$10.68, 12.0, 13.50, and \$15.

**Wait on the Tip Rate:** While there is a lot of emotion around the tip rate, that is one area where all the analysis above falls short. Transferring the payment of tipped employees from customers to their employers is not about changing wages, it is about changing social norms and enforcement. While that may be a noble objective, it will inevitably add extra pressure on restaurants during the transition. Here the push should be on making tipped employees fully aware that their employer has an obligation to make sure they gross at least the federal minimum wage for every pay period, and to hold companies accountable. Yes, bump it up a bit, but the attempt to solve two separate problems at the same time only makes it more likely that economic mistakes will be made. Perhaps the independent minimum wage committee can be given thresholds around which it can institute changes in time.

**A final note on US competitiveness.** It is not healthy for an economy's competitiveness if companies become dependent on falling real wages for unskilled labor. Naturally if those companies automate (and buy US automation), it will create higher paid manufacturing jobs as well as those that sell, install & maintain automation. It is worthy of note that there is no historic negative impact of minimum wage increases on US exports.

- Post 1990/91 minimum wage hikes, US exports rose 52% from 1990 to 1995 (44% for advanced economies)
- Post 1996/97 minimum wage hike, US exports rose 38% from 1996-2001 (18% for advanced economies)
- Post 2007-09 minimum wage hikes, US exports rose 7.8% from pre-crisis 2008 to 2014 (7.6% for advanced economies)

*\*Note both Germany and the UK also both saw consistent export growth after instituting minimum wages in 2015 & 1998 respectively.*

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