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Re: CT Draft Bill LCO No. 3916, Section 5

Energy and Technology Committee

September 8, 2020

Business Cycle–Sensitive Utility-Rate Regulation

Usually, when demand for a commodity falls, prices drop over the medium to long term. But utilities are different. When demand goes down, as in a recession, prices don't naturally follow. In fact, the opposite happens. In order to cover their costs amid lower sales and a higher number of customers in default, utilities may ask regulators to raise prices. This appears to be what happened in the United States during the Great Recession and the recession of 2001.

From the perspective of stabilizing aggregate demand, this price pattern is unfortunate. Utilities tend to be necessities; most consumers can cut down only slightly when prices increase. Higher prices for utilities therefore act like a tax hike: just about everyone feels the pain. Utility spikes reduce discretionary income and, thus, aggregate demand.

Utility regulators could work differently. They could account for aggregate demand when considering rate proposals. At the zero lower bound, regulators could reject rate increases. And if their quadrennial reviews of utility prices happen to occur during a liquidity trap, they could demand lower rates. After the slump is over, regulators could then allow higher rates to enable the utility to cover its cost of capital over the business cycle.[i]

Reducing utility rates at the zero lower bound raises the discretionary income of utility consumers. With less spending on utilities, consumers spend more on everything else. If utilities respond to lower rates by reducing their cash holdings, then lower rates in a liquidity trap directly stimulate the economy. Instead of cash sitting on utility balance sheets, aggregate demand increases as consumers spend much of their increased discretionary income.

While business-cycle sensitivity should raise output and employment at the zero lower bound, it doesn't affect output in ordinary times. This may seem counterintuitive, because higher utility prices impede aggregate demand in ordinary economic times. But in ordinary times, aggregate demand does not determine output. Interest rates and prices adjust to aggregate demand fluctuations, leaving output and unemployment unchanged.

If utilities respond to lower rates by reducing dividend payments at the zero lower bound, however, then we can no longer be certain that business-cycle-sensitive utility regulation stimulates the economy. Utility consumers spend more at the zero lower bound, but the utility's investors earn less and spend less. Here, we have to consider the propensity of individual market participants to spend. On balance, we would expect utility customers to have a higher propensity to spend an additional dollar than would utility investors. This is because utility customers often do not have access to capital markets and so cannot borrow in hard times. Their spending is therefore determined by their discretionary income. Decreases in utility rates increase discretionary income and should thus increase spending by these customers.

By contrast, utility investors, even the proverbial "widows and orphans," can more easily offset decreases in discretionary income by borrowing or by selling stock rather than reducing consumption. Dividend recipients also tend to be wealthier than the average consumer, increasing their propensity to save an additional dollar rather than to spend it on essentials. Indeed, a considerable body of empirical research supports the prediction that the rich spend less of an incremental dollar than the poor do.[ii] In total, the consumption of utility investors should be less sensitive than the consumption of utility customers to short-run changes in discretionary income at the zero lower bound. As a result, aggregate demand should increase in response to lower utility rates at the zero lower bound.

Because the utility still earns its costs of capital over the course of the business cycle, its investment patterns should not change as a result of business-cycle-sensitive regulation. Utility investment depends on long-range risk-adjusted returns, which will be unaffected by the change in regulation. Investment theory requires assets whose returns are more correlated with aggregate income to receive a higher average return. Therefore, the utility's average profits over the business cycle must increase if regulators impose business-cycle-sensitive utility regulation. Higher utility profits in ordinary times need to more than offset lower profits at the zero lower bound.

Ultimately, better access to capital markets and investors' higher propensities to save suggest that the stimulus effect of lower utility prices at the zero lower bound will hold, even though utility companies and investors will, for a time, make less money.

Magnitude of Effects

For many families, utility rates matter as much as tax rates or transfer spending. In 2010, households in the second quintile (twentieth to fortieth percentiles) of the U.S. income distribution earned an average of almost $27,000 before taxes. These households spent an average of over $1,600 on electricity and natural gas alone.[iii] These households paid an average of slightly over $1,000 in combined U.S. income taxes and social security taxes.[iv] Their utility bills exceeded their tax bills. The discrepancy is even larger for the lowest quintile in the income distribution, who spent approximately $1,200 on electricity and natural gas in 2010 but paid only a net $194 in federal income and social security taxes.

Because lower-income and lower-wealth households have high marginal propensities to consume, "conventional wisdom" holds that stimulus programs targeted at these households have "particularly strong" effects.[v] In the United States, the Obama administration prioritized decreases in Social Security taxes as a stimulus measure over other tax reductions because low to middle-income households pay substantial amounts of Social Security taxes. From 2008 to 2010, net income tax and Social Security payments by households in the first income quintile decreased from $357 to $194. For the second quintile of income, average combined Social Security and income tax payments decreased from $1,667 to $1,082.

These tax reductions provided an important aggregate demand stimulus because these households consumed much of the increase in discretionary income. But business-cycle-sensitive utility regulation alone could provide a comparable stimulus. If retail electricity prices decreased by 7 percent between March 2008 to March 2010 instead of increasing by over 7 percent (as they did, in fact), then business-cycle-sensitive electricity regulation provides roughly the same stimulus effect as tax reductions for the lowest quintile of the income distribution and almost half as much stimulus as the tax decreases for the second quintile. …

Recession-sensitive utility regulation thus offers Connecticut the opportunity to help the least fortunate among us while providing quantitatively meaningful stimulus for our ailing economy.

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[i] I assume that utility investment is unchanged by the macroeconomically sensitive regulatory regime. But if long-run returns are the same for the utility, then investment should remain the same. (Financing constraints should be relatively minor for a regulated monopoly.)

[ii] For a recent discussion of how the marginal propensity to consume varies with income and wealth, see, e.g., Christopher D. Carroll, Jiri Slacalek, and Kiichi Tokuoka, "The Distribution of Wealth and the Marginal Propensity to Consume," European Central Bank Working Paper No. 1655 (March 2014), https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1655.pdf, summarizing a series of studies that find "that the annual marginal propensity to consume out of one-time income shocks . . . is substantially larger for low-wealth than for high-wealth households." For an important early article in the literature, see Stephen P. Zeldes, "Consumption and Liquidity Constraints: An Empirical Investigation," *Journal of Political Economy* 97 (1989): 305–346.

[iii] For data from the Consumer Expenditure Survey, see U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, https://www.bls.gov/cex/, (specific calculations available from the author). The average U.S. household also spent about $500 on water and sewer services; see Trey Talley, "How Much Do Households Pay for Utilities, Fuels, and Public Services?", http://efc.web.unc.edu/2016/10/07/households-utilities-fuels-public-services/

[iv] Consumer Expenditure Survey, https://www.bls.gov/cex/, (CES survey data on federal income taxes, and Social Security payments, data also available from author upon request). The Consumer Expenditure Survey lumps Social Security payments with other pension contributions. Thus, the figures provided here overstate Social Security contributions. In the first and second quintiles of the income distribution, however, pension contributions should be small, as evidenced by the low value of retirement assets for people in these categories.

[v] See Carroll, Slacalek, Kiichi Tokuoka, "The Distribution of Wealth and the Marginal Propensity to Consume," 10.

Written testimony submitted with support of the Tobin Center for Economic Policy at Yale University