

*USTelecom Research Brief
November 11, 2019*

COUNTERPOINT: STUDY FAILS TO SHOW UTILITY REGULATION DOES NOT AFFECT BROADBAND INVESTMENT

Patrick Brogan
Vice President for Industry Analysis



THE BROADBAND ASSOCIATION

USTelecom.org

Summary

A recent study by Christopher A. Hooton of the George Washington University Institute of Public Policy (September 2019) ("[Hooton study](#)") attempts, but fails, to make the case that certain "net neutrality" regulations have no impact on broadband internet service provider (ISP) capital investment decisions. The study contains multiple flaws that are fatal to its validity. Most fundamentally, while the study claims to assess the effects of net neutrality regulations on capital investment, the data the study employs *do not measure* capital investment. In addition, the source data for the dependent variable have not been validated or cleaned; therefore, the data are incomplete, inconsistently reported, and contain errors. Furthermore, the study employs an inappropriate statistical model and improperly considers the formation of regulatory expectations and the timing of capital budgeting decisions. In all, this study contains a number of fundamental flaws and it should hold no weight in the debate about the impact of regulation on investment.

USTelecom's Interest in This Debate and Capex Data

As a primary source for broadband investment data, USTelecom has an interest in the analysis of regulation and investments in broadband. Its annual data series on aggregate capex for wireline, wireless, and cable broadband providers from 1996 through 2018 is a carefully constructed and consistent measure of industry investment. The data are widely used in industry analyses.

USTelecom has stated that observed trends are suggestive that Title II regulatory classification had a negative impact on broadband providers' capital investment. According to USTelecom's [data](#), industry capital investment grew each year since bottoming in 2009 after the last recession, and peaking in 2014 at \$78 billion. In 2015, when the FCC imposed heavier utility-style Title II regulation on broadband (the classification the 2017 Restoring Internet Freedom (RIF) Order reversed), annual industry capex fell by half a billion dollars. Capex fell again in 2016 by \$2.7 billion. Yet, capital investment returned to growth in 2017, when the FCC signaled its intention to repeal Title II classification of broadband. Investment grew by \$2.1 billion that year and grew again in 2018 by \$3.1 billion.

The data reflect high-level trends that are suggestive of regulatory impacts, and the trends are consistent with economic theory. In particular, they are consistent with the hypothesis that utility-style regulation reduced investment incentives. Of course, simple trends are not conclusive. USTelecom has "consistently stated that the relevant [empirical] question with respect to the impact of Title II on investment is what investment would have been over the long term under different regulatory scenarios, holding other factors [that affect investment] constant."

In general, USTelecom believes that well-constructed econometric studies with suitable data can be useful in discerning statistical impacts. Such evidence exists. For example, Phoenix Center Chief Economist, George Ford, has found evidence of Title II impacts on investment in his own [research](#) and has published a thorough [review and critique](#) of the research the FCC considered in its 2017 RIF Order.

Description and Critique of the Hooton study

The Hooton study employs a statistical model that compares changes in average investment levels between "telecommunications" firms (the treatment group) and all other firms (the control group) after the imposition of net neutrality regulations in 2010 and 2015. The study's author claims to have found new data that isolate *newly assumed* capital investment obligations made *on a particular date*. The claim is unfounded since the data, among other things, simply *do not measure* capital spending.

Instead of actual capital expenditures, the study uses as the dependent variable — i.e., the outcome being studied — a supplemental financial account called “Capital Expenditures Incurred but Not Yet Paid” (“CEINYP”). Some public companies, but not all, in some periods, but not all, report CEINYP to the Securities Exchange Commission (SEC). The SEC publishes the raw, un-validated data in its online Financial Statements Data Sets, and the study uses data from first quarter 2009 through third quarter 2018.

The study’s author asserts, without reference to, e.g., accounting standards, that the CEINYP account measures “new investment obligations assumed in the current period rather than actualized previous obligations captured by capex paid.” The author further asserts that the metric “reflects the actual balance sheet incursion dates, meaning [it] is able to specifically isolate *ex post* changes in capital expenditure investment decisions. Additionally, since the data provide exact dates, the paper is able to map them on a more precise timeline that follows specific regulatory actions rather than simply lumping them together into annual totals.” As detailed below, these claims are incorrect.

1. CEINYP Does Not Measure Capital Spending.

The study’s characterization of the CEINYP account is wrong; in fact it is backwards. CEINYP is a *liability*, not an *expense*. It does not measure “new investment obligations assumed in the current period rather than actualized previous obligations captured by capex paid.” It reflects the balance of old investment obligations that remain unpaid. As the [Financial Accounting Standards Board \(FASB\)](#) defines it, CEINYP is a “[f]uture cash outflow to pay for purchases of fixed assets that have occurred” (see below). The account may reflect vendor financing arrangements, or routine processes for invoicing and payment. The account may also reflect credit balances that the company has carried over for multiple reporting periods.

FASB – 2019 U.S. Generally Accepted Accounting Principles Financial Reporting Taxonomy

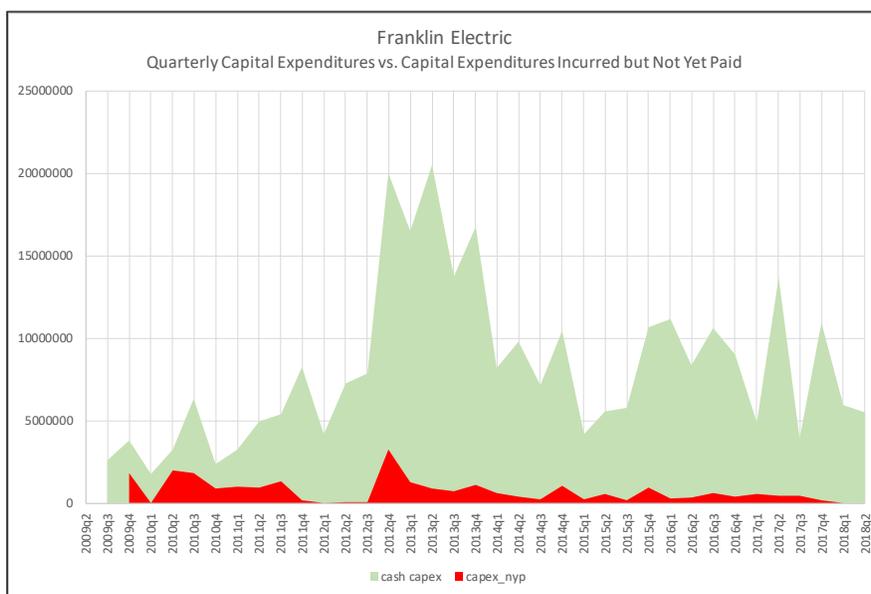
Details		Relationships	Tree Locations
Capital Expenditures Incurred but Not yet Paid			
Labels			
Type	Lang	Label	
Standard Label	en-US	Capital Expenditures Incurred but Not yet Paid	
Documentation	en-US	Future cash outflow to pay for purchases of fixed assets that have occurred.	

In addition, CEINYP cannot “isolate *ex post* change in capital expenditure investment decisions” in response to a change in regulation. It measures the unpaid balance from *ex ante* capital expenditure investment decisions made prior to a change in regulation. Finally, CEINYP does not “reflect the actual balance sheet incursion dates.” While the study states the data reflect newly assumed capital obligations “tracked to exact days,” this is a misreading of the source data. The dates in the database represent the end date of each reporting company’s fiscal quarter; and the CEINYP balance at any given quarter end may include unpaid portions of capital expenditures from months or even years prior and affects the balance sheet only through the accounts payable balance.

2. The Data Are Unsuitable for Statistical Analysis

Aside from the inappropriate measure of the dependent variable, the SEC data used in the Hooton study are “as filed data.” In other words, the SEC neither validates nor cleans the data. Even a cursory review of the raw data indicates it is unsuitable for statistical analysis.

- A. *There Is an Enormous Amount of Missing Data.* Many companies either do not report CEINYP at all or else report it sporadically. For example, a review of the SEC data suggests a ballpark estimate of approximately 75 companies in the study’s treatment group. If so, a complete data panel for that group would include more than 2,900 observations (75 companies * 39 quarters = 2,925). Yet, according to Table 2 of the study, there were 270 observations of CEINYP for the “ISPs” treatment group. This implies that data were missing for approximately 90 percent of the potential treatment group observations. This estimate captures only companies that actually report CEINYP and therefore appear in the study’s data. As Phoenix Center has noted, AT&T and Verizon, the two largest, most capital-intensive ISPs in the U.S. do not report CEINYP to the SEC database and therefore they are not included in the Hooton study. According to USTelecom capex data, AT&T and Verizon have historically accounted for approximately half of broadband ISP capital investment. *A measure that excludes these two companies cannot meaningfully reflect the industry.*
- B. *CEINYP Is Small Compared to Cash Capex.* CEINYP does not measure capital spending but the unpaid balance of capital expenditures made in the past. CEINYP is a supplemental account; so some firms report it, others do not. For firms that do report it, CEINYP is typically a small fraction of actual capital expenditures. The following chart provides an illustrative example comparing actual capital expenditures to CEINYP for Franklin Electric. CEINYP is miniscule compared to actual capital spending, both in individual periods and over time, and there are data missing even for this company with relatively complete data.



- C. *The Data Are Not Sufficiently Clean for Statistical Analysis.* The SEC Financial Statements Data Set contains massive amounts of “as filed” data for thousands of companies over approximately 10 years and hundreds of financial accounts. Each quarterly data set may contain millions of rows of data. Even for a small set of companies and accounts over a handful of periods, data typically requires significant cleanup to be sufficiently suited for statistical analysis. For the Hooton study, there are 39 quarters of CEINYP data for thousands of treatment group and non-treatment group companies. As the data is marked “as filed,” the SEC has made no effort to evaluate the reliability or accuracy of the data or the database. It is unlikely – and at best unclear – that the author of the study has independently checked or assured the accuracy of this extremely large data set. The potential issues are many and a full treatment is beyond the scope of this critique; but a few examples include,

e.g., double reporting across company affiliates; double reporting of historical data and possible historical revisions; accounting for mergers, spinoffs, privatizations, and public offerings; inclusion of inappropriate data reflecting international spending; and coding errors. Of course, even perfectly clean CEINYP data would not cure the fact the chosen data does not measure capital expenditures.

3. Other Model Issues

Putting aside the fundamental data flaws in the Hooton study, there are also many technical issues with the study's econometric model, which the Phoenix Center has [detailed](#). Examples include: improperly testing for company-level rather than industry effects; having done so, using industry rather than company level controls (known as "fixed effects"); testing each treatment date in a separate model such that the interplay between treatment dates is not captured in the model; poor control group selection; and inclusion of non-ISPs in the treatment group; among others.

Conclusion

Despite the dressings of academia, the Hooton study purporting to find no impact between broadband investment and regulation is fatally flawed. Most fundamentally, *the data the study employs do not measure the capital expenditure commitments of firms but the unpaid balance of capital expenditures incurred in the past*. The study's statistical model is likewise invalid, as it relies on mistaken assumptions about how companies make capital budgeting decisions based on regulatory expectations.

It is important for policymakers to understand the relationship between regulation and infrastructure investment. USTelecom welcomes research on this important topic. Nonetheless, USTelecom does not see how the Hooton study, which does not analyze capital expenditure data, discerns the effect of regulation on capital expenditures. With an invalid measure of the outcome of interest and a flawed statistical model, the study should hold no weight in any regulatory or legislative policy actions.