

## Regulatory Expenditures, Economic Growth and Jobs: A Reply to Comments

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### Introduction

In our recent paper, *Regulatory Expenditures, Economic Growth and Jobs: An Empirical Study*, we applied econometric methods to fifty years of data in an effort to quantify the relationship between the size of the federal regulatory bureaucracy and important macroeconomic outcomes such as economic growth and private sector employment.<sup>1</sup> We found that reducing the amount spent on federal regulatory agencies by even modest amounts could have significant positive effects on both private sector output and employment. Our study has received significant attention both in the media<sup>2</sup> and on Capitol Hill.<sup>3</sup>

In conducting our analysis, we measured the extent of regulation in the economy using a dataset on regulatory agency budgets dating back to 1960, collected by the Regulatory Studies Center at The George Washington University in Washington, D.C.—led by former OIRA Director Susan Dudley—and the Weidenbaum Center on the Economy, Government, and Public Policy at the Washington University in St. Louis, Missouri.<sup>4</sup> The *Regulator's Budget* report is released annually.<sup>5</sup>

To our knowledge, we were the first to use these data in an econometric analysis of the effect of regulation on the economy. Our strong findings indicate that the *Regulator's Budget* data is more than just a routine quantification of the monetary size of the federal regulatory

bureaucracy; the data also may provide value in measuring the impact of regulation on the economy using econometric methods.

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In two recent releases by the Regulatory Studies Center ("RSC"), including a *Commentary* (December 2011)<sup>6</sup> and *Working Paper* (March 2012)<sup>7</sup>, Center researchers commented on our study and conducted some analysis of their own regarding the *Regulators' Budget* and economic activity. As an initial matter, we are pleased that the Center's researchers have provided an independent replication of the results presented in our *Regulatory Expenditures* study.<sup>8</sup> Replication is a core principle of the scientific method. We are also pleased that the researchers found our explanation for the use of the budget data as a measure of regulation "compelling" and that these data had "significant advantages over the more traditional measures used."<sup>9</sup>

Yet, the Center also claims that our results derive from a special case and are not robust. In stark contrast to our work, the Center's analysis,

which measures something different from our own, leads the authors' to conclude that, if anything, the effect of regulation on the economy is *positive*,<sup>10</sup> though most of their analysis fails to find any relationship between the federal regulatory budget and the private economy. Indeed, in their own words, the Center's researchers observe:

*... there is no evidence of a causal relationship between changes in regulatory budget and macroeconomic performance. In fact most of our point estimates suggest, if anything, a positive relationship between changes in the on-budget costs of federal regulation and macroeconomic outcomes.*<sup>11</sup>

In light of its source, this conclusion is puzzling. If the *Regulators' Budget* has no macroeconomic effect, then why does the Regulatory Studies Center bother to compile the data? And, if regulation has a "positive" effect on the economy, as the Center's researchers suggest, then why do small businesses list regulation as the most important hurdle to growing their business (a statistic listed in the Center's *Commentary* and *Working Paper*)?<sup>12</sup>

Unlike the Regulatory Studies Center's own researchers, however, we are not yet prepared to limit their annual report on the *Regulators' Budget* to a largely fruitless counting exercise, or, in light of our own research, conclude that regulation, if anything, has a positive effect on the economy. Instead, we demonstrate, once more, that the data on federal regulatory expenditures does serve as a meaningful "barometer of regulatory activity" when used in an econometric analysis of the macroeconomy.<sup>13</sup> To do so, we show that the Regulatory Studies Center's "preferred" specification is defective, and does not produce robust estimates. In contrast, our estimates are robust across estimation techniques and modeling choices. Moreover, a minor adjustment to the Center's "preferred" model renders results very similar

to ours: regulation is costly in that it reduces economic activity.

Notably, we do not address the entire Center's analysis contained in its *Working Paper*; we limit our attention to their alternative specification of the model found in our earlier paper. Whether or not the defects in their chosen methods taint all of their analysis is unclear, but proving so is beyond the scope of this PERSPECTIVE.

### Review of Our Paper

In our *Regulatory Expenditures* study, we gathered data on private GDP, private sector employment, and data on the federal regulatory budget in an effort to assess the relationship between regulation and these macroeconomic outcomes. Our primary model consisted of three variables: (1) private GDP per capita (total GDP less government spending, divided by population); (2) total private sector employment; and (3) total federal spending on regulatory activities expressed as a share of GDP. Thus, regulation was measured in relation to the size of the economy being regulated, which in our view has intuitive appeal and good statistical properties.

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After evaluating the time series properties of the data so that the proper econometric techniques could be applied, we estimated the model as a tri-variate Vector Auto-Regression ("VAR"). All variables were expressed as first differences.

The impact of regulation on the macro series were computed using the Generalized Impulse Response Function (“GIRF”).

The results were impressive, and are detailed in our paper. For a shock to the regulatory budget, we found short-term reductions in private-sector GDP-per-capita and long-term reductions in private sector employment. A 5% reduction across-the-board reduction in federal agency operating budgets (\$2.8 billion) not only reduced government spending (which, given large deficits, is a benefit itself), but increased private-sector GDP by about \$75 billion per year. That same reduction in spending increased private-sector employment by about 1.2 million jobs per year. For each regulatory job lost from the expenditure cut, there was an increase in 98 private sector jobs.

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The robustness of our findings was evaluated in our earlier study using a bi-variate and quad-variate VARs (adding private investment as a fourth variable), as well as alternative definitions of the variables. In all cases, the results were similar to those reported, though the largest impacts were found using a bi-variate VAR. We also estimated the model over different time periods, and found the effects were larger in magnitude in more recent time frames. These results suggested that regulation has had a more deleterious effect on the economy in recent decades. Nevertheless, to provide conservative estimates, we relied on the

results from the tri-variate VAR using the full sample.

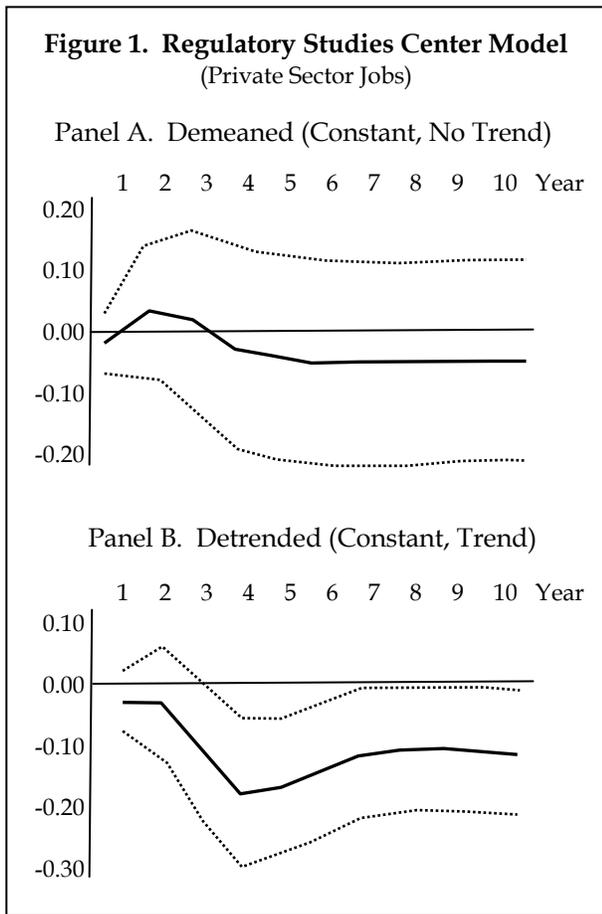
### The Regulatory Studies Center’s Comments

As mentioned above, the Regulatory Studies Center was able to replicate our results. This is encouraging, since replication is highly valued in scientific research. For some studies of the impact of regulation, replication has proven difficult.<sup>14</sup> We have provided our data—all of which is publicly available—to other researchers upon request, and they too have indicated the ability to replicate our findings.

With replication accomplished, the researchers from the Regulatory Studies Center decided to alter our model by changing the specification of the regulation variable. Rather than express regulation as a share of GDP as we did, the Center’s researchers used the federal regulatory budget as a variable, choosing not to express it as a share of GDP. This change, according to the authors, is desirable because expressing the federal regulatory budget as a share of GDP “compromises the integrity of the model,” since GDP is also included in the model. Also, the researchers conclude that this alternate specification led to different results from ours, thereby “illustrat[ing] how unstable the statistical relationship between the regulatory budget and the macroeconomy likely is.”<sup>15</sup>

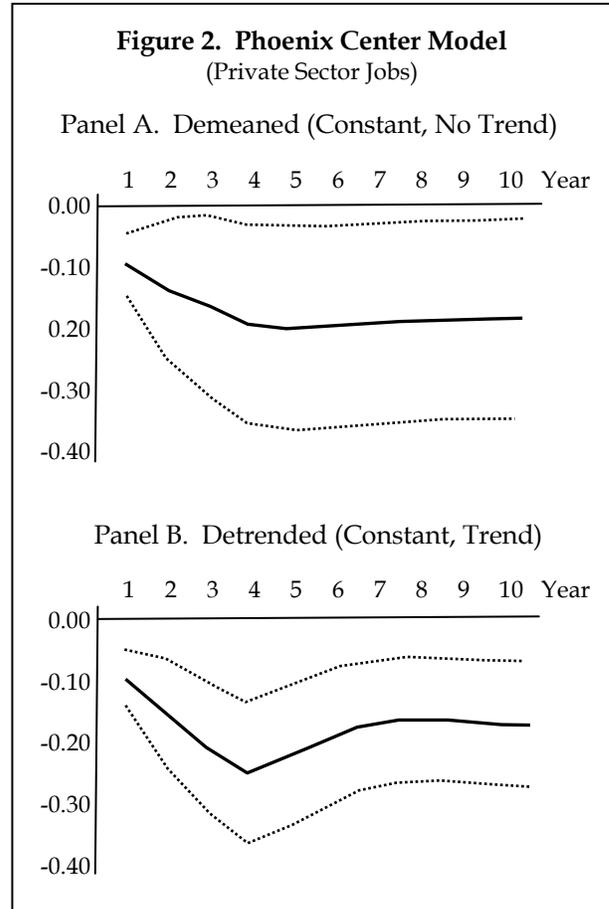
The Center’s researchers are wrong on both counts. First, the researchers’ “preferred” model, which changes the regulation variable in the manner described above, introduces a statistical defect to the analysis in that the regulation variable has a trend. Correcting this defect leads to results very similar to our own. The GIRFs in Figure 1 illustrate this fact. In Panel A, we see a result consistent with that reported in the Center’s Working Paper, where the GIRF suggests no statistically significant response of private jobs to shocks in the regulation variable. (The dashed lines are bootstrapped one-standard deviation confidence

bands.) This GIRF is computed from a demeaned, but not detrended model. In Panel B, however, we include both a constant and a trend in the model, and the results look very similar to those reported in our paper—*regulation reduces private sector employment*. Obviously, the Center’s “preferred” model, where regulation is not normalized by the size of the economy, is not robust across estimation choices, as it fails to capture trends in the data.



Our model, however, is robust. In Figure 2, we present the results using our measure of regulation (the federal regulatory budget as a share of GDP). As shown in the figure, regardless of how we estimate the model (with or without a trend), the effects of the regulatory budget on private sector employment is strongly negative. The results are also robust, unlike those using the Center’s preferred model. Nevertheless, comparing Panel B across Figures

1 and 2 reveals that after detrending, both specifications of the regulatory variable render similar (negative) results, though our approach renders results with better statistical significance.



Second, expressing the regulatory budget as a share of GDP in no way compromises the integrity of the model as claimed by the Center’s researchers. The claim has no substance. In fact, in our earlier paper we described the results from a bi-variate VAR that did not include the GDP variable in the model. The effect of regulation on employment was slightly larger, not smaller. Thus, expressing regulation as a share of GDP, while also included GDP in the model, does not strengthen the result or weaken the robustness of our findings. In our view, scaling the regulatory budget by the size of the economy being regulated is supported both empirically and intuitively.

The Center's study includes other efforts to minimize the relevance of their *Regulators' Budget* analysis. For example, the Center's researchers argue that the budget for TSA does not belong in the regulatory budget "from a theoretical perspective."<sup>16</sup> We strongly disagree. Indeed, the arguably necessary but still burdensome security procedures implemented by TSA have been shown to have a significant negative effect on economic activity.<sup>17</sup> And, if the TSA budget should not be considered "regulation" from a "theoretical perspective", as the RSC researchers claim, then why is it included in the *Regulator's Budget* in the first instance? Are we to believe the *Regulator's Budget* report is intentionally misleading policymakers or just carelessly constructed?

As we made clear in our earlier paper, there may be benefits to regulation, but there are also costs. In some cases the benefits outweigh the costs, but for others the cost-benefit comparison is not favorable. Thus, our question is not whether TSA's effort is necessary, but whether this effort imposes costs on the economy. On the cost question, the answer is obviously "yes," both empirically and intuitively. TSA has increased the cost of travel, both in pecuniary and non-pecuniary ways, thereby reducing economic activity in travel and related economic sectors.

## Conclusion

In a recent PHOENIX CENTER BULLETIN, *Regulatory Expenditures, Economic Growth and Jobs: An Empirical Study*, we quantified the relationship between the size of the federal regulatory bureaucracy and important macroeconomic outcomes such as economic growth and private sector employment. We found that reducing the operating budgets of federal regulatory agencies by even modest amounts has significant positive effects on both private sector output and employment. In a challenge to our findings, researchers at the Regulatory Studies Center at George

Washington University argue that our model was improperly specified and our results were not robust. In this PERSPECTIVE, we demonstrate the Center's researchers are wrong. In fact, as we show here, it is their model that is poorly specified and not robust.

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So, while the Regulatory Studies Center concludes that (a) their signature *Regulator's Budget* publication has no policy relevance; and (b) regulation, if anything, has a positive effect on the economy, we once again demonstrate that the effect of regulation on the private sector appears decidedly costly. Whether or not regulations bring sufficient benefit to offset these costs is another question, and a question for which our methods from the *Regulatory Expenditures* study provide no answers (as we made clear in our earlier paper). Given the magnitude of the negative effects, however, we suspect that many regulations will easily flunk the cost-benefit test. Thus, we again conclude that if policymakers wish to stimulate jobs and reduce federal spending, then responsibly trimming the operating budgets of the federal bureaucracy remains a viable option.

## NOTES:

\* Dr. George S. Ford is the Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies. The views expressed in this PERSPECTIVE do not represent the views of the Phoenix Center or its staff. He is grateful to Phoenix Center Senior Fellow Randy Beard for helpful suggestions.

<sup>1</sup> T. Beard, G. Ford, H. Kim, and L. Spiwak, *Regulatory Expenditures, Economic Growth and Jobs: An Empirical Study*, PHOENIX CENTER POLICY BULLETIN NO. 28 (April 2011) (available at: <http://www.phoenix-center.org/PolicyBulletin/PCPB28Final.pdf>).

<sup>2</sup> See, e.g., P. Roff, *Study Confirms Cutting Federal Regulations Lowers Unemployment*, US NEWS AND WORLD REPORT (April 12, 2011) (available at: <http://www.usnews.com/opinion/blogs/peter-roff/2011/04/12/study-confirms-cutting-federal-regulations-lowers-unemployment>); *Cutting Government Red Tape Produces New Jobs*, WASHINGTON EXAMINER (June 26, 2011) (available at: <http://washingtonexaminer.com/opinion/editorials/2011/06/cutting-government-red-tape-produces-new-jobs/40274>).

<sup>3</sup> *Excessive Regulations & Red Tape "A Tremendous Drag on the Economy"*, Official Blog of Speaker of the House John Boehner (June 27, 2011) (available at: <http://www.speaker.gov/blog/?postid=249065>); *Cutting Government Red Tape Creates Jobs*, Official Blog of Majority Leader Eric Cantor (June 27, 2011) (available at: <http://majorityleader.gov/blog/2011/06/cutting-government-red-tape-creates-jobs.html>).

<sup>4</sup> <http://www.regulatorystudies.gwu.edu> and <http://wc.wustl.edu>.

<sup>5</sup> S. Dudley and M. Warren, *Fiscal Stalemate Reflected in Regulators' Budget: An Analysis of the U.S. Budget for Fiscal Years 2011 and 2012* (May 2011) (available at: [http://www.regulatorystudies.gwu.edu/images/pdf/2012\\_regulators\\_budget.pdf](http://www.regulatorystudies.gwu.edu/images/pdf/2012_regulators_budget.pdf)).

<sup>6</sup> T. Sinclair and K. Vesey, *The Private Sector Costs of the Regulators' Budget*, Regulatory Policy Commentary (December 19, 2011) (available at: [http://regulatorystudies.gwu.edu/images/commentary/2011\\_12\\_19\\_reg\\_priv\\_costs.pdf](http://regulatorystudies.gwu.edu/images/commentary/2011_12_19_reg_priv_costs.pdf)) (hereinafter "RSC Commentary").

<sup>7</sup> T. Sinclair and K. Vesey, *Regulation, Jobs, and Economic Growth: An Empirical Analysis*, Working Paper, Regulatory Studies Center, George Washington University (March 2012) (available at: [http://www.regulatorystudies.gwu.edu/images/pdf/032212\\_sinclair\\_vesey\\_reg\\_jobs\\_growth.pdf](http://www.regulatorystudies.gwu.edu/images/pdf/032212_sinclair_vesey_reg_jobs_growth.pdf)) (hereinafter "RSC Study").

<sup>8</sup> RSC Study, *id.* at 24 ("We replicated the authors' study ...").

<sup>9</sup> *Id.* at 5.

<sup>10</sup> RSC Commentary, *supra* n. 5 ("increasing the Regulators' Budget is associated, if anything, with an increase in real private sector GDP").

<sup>11</sup> RSC Study, *supra* n. 6 at 26-27.

<sup>12</sup> RSC Commentary, *supra* n. 5 ("A recent Gallup survey found that "Small-business owners in the United States are most likely to say complying with government regulations (22%) is the most important problem facing them today.").

<sup>13</sup> *Regulators' Budget Study 2011-12*, *supra* n. 5 at 2 ("This information can serve as a barometer of regulatory activity, providing policy makers and analysts with useful insights into the composition and evolution of regulation over time.").

<sup>14</sup> See, e.g., S. A. Shapiro, R. Ruttenberg and J. Goodwin, *Setting the Record Straight: The Crain and Crain Report on Regulatory Costs*, CENTER FOR PROGRESSIVE REFORM WHITE PAPER #1103 (February 2011) (available at: [http://www.progressivereform.org/articles/SBA\\_Regulatory\\_Costs\\_Analysis\\_1103.pdf](http://www.progressivereform.org/articles/SBA_Regulatory_Costs_Analysis_1103.pdf)).

<sup>15</sup> RSC Study, *supra* n. 7 at 24.

<sup>16</sup> *Id.* at 6.

<sup>17</sup> G. Blalock, V. Kadiyali, D. Simon, *The Impact of Post-9/11 Airport Security Measures on the Demand for Air Travel*, 50 JOURNAL OF LAW AND ECONOMICS 731-755 (2007) (draft available at: [http://dyson.cornell.edu/faculty\\_sites/gb78/wp/JLE\\_6301.pdf](http://dyson.cornell.edu/faculty_sites/gb78/wp/JLE_6301.pdf)); J. Kickler, *Post 9/11 Travel: What Airport Security Costs Us*, CNN MONEY (September 8, 2011) (available at: [http://money.cnn.com/2011/09/08/pf/911\\_travel/index.htm](http://money.cnn.com/2011/09/08/pf/911_travel/index.htm)).