

# **Government Contractors and Sticky SGA Costs**

by

Stephen C. Hansen  
Naval Postgraduate School



NAVAL  
POSTGRADUATE  
SCHOOL

These discussion comments reflect the private views of the presenter and do not represent the views of the US Federal Government or the US Navy.

# Background

The government procurement process is complex. Part of the complexity is by design (ex. minority owned business participation) and part is due to the unique language, forms, and purchasing processes of government agencies. Government contracts can also involve significant delays in obtaining contracts and receiving payment. All of these issues can generate additional costs to government suppliers (specialized staff and programs, bonding ...).



Although there is substantial anecdotal evidence, there is little empirical evidence about the magnitude of these additional costs.

## **Research Question:**

Are the additional costs of dealing with the government large enough to be detected in government suppliers' financial statements?

Specifically, do private firms' and government suppliers' costs respond differently to revenue increases (decreases)?



# Methodology 1

Addressing my research question requires identifying where government contracting costs are likely to show up on published Income Statements.

Income statements have two distinct expense categories:

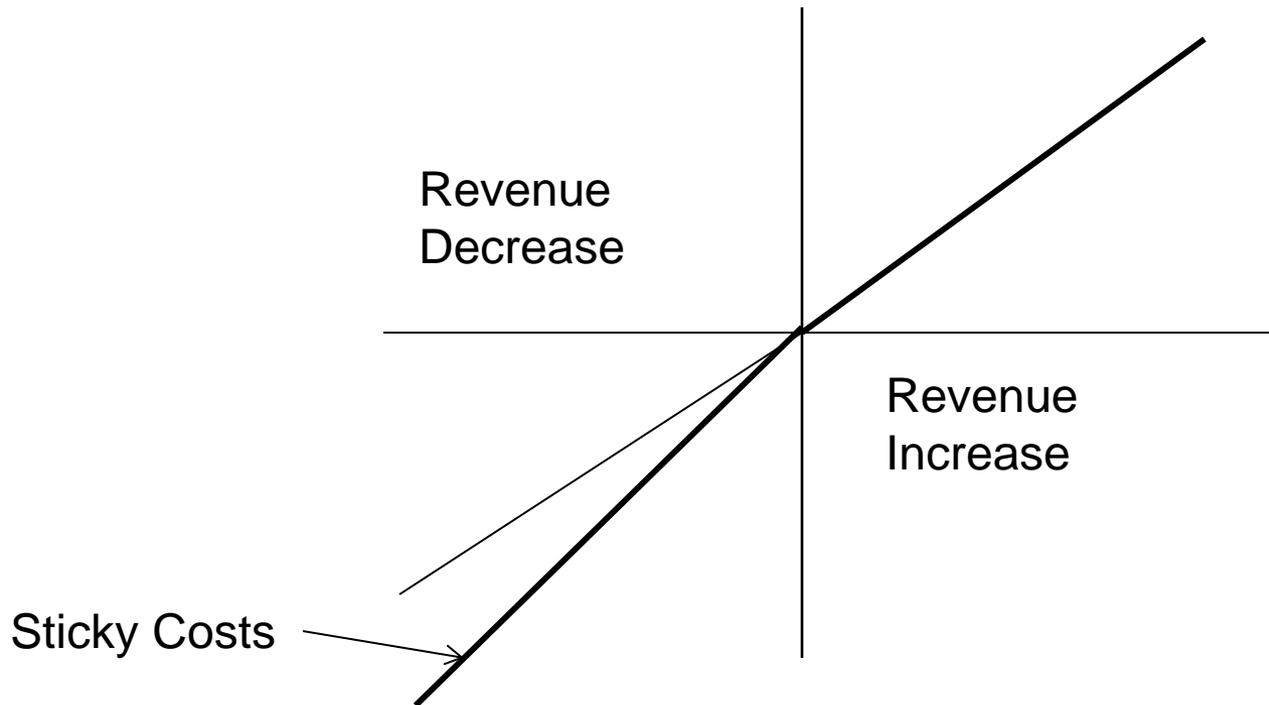
- Cost of Goods Sold captures the costs of manufacturing and delivering products/services, and
- Selling, General, and Administrative (SGA) expenses reflect marketing, administrative, and general overhead costs.

SGA expenses are the most likely place to detect additional costs of dealing with the government.



# Methodology 2

Prior research has shown that private sector firms have sticky SGA costs. Specifically, SGA costs rise more when revenues increase than they fall when revenues decrease.



# Basic Sticky SGA Cost Model

$$\log\left(\frac{SGA_{i,t}}{SGA_{i,t-1}}\right) = \alpha_0 + \alpha_1 \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right) + \alpha_2 \text{DecrDum}_{i,t} \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right),$$

where  $\text{Decrdum}_{i,t} = 1$  if sales revenue fell from period t-1 to t.

In prior models costs are sticky which translates to  $\alpha_2$  is negative and significant.



# Methodology 3

I expand the Basic Sticky Cost Model by adding a dummy for federal contractors. Let  $Fseg = 1$  if a company is a Federal Focus Firm.

$$\begin{aligned} \log\left(\frac{SGA_{i,t}}{SGA_{i,t-1}}\right) = & \alpha_0 + \alpha_1 \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right) \\ & + \alpha_2 \text{DecrDum}_{i,t} \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right) \\ & + \alpha_3 FSeg + \alpha_4 FSeg * \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right) \\ & + \alpha_5 FSeg * \text{DecrDum}_{i,t} \text{Log}\left(\frac{Revenue_{i,t}}{Revenue_{i,t-1}}\right) + \delta_{i,t} \end{aligned}$$

If Federal focus firms respond differently to revenue increases, then  $\alpha_4$  should be significant.

If Federal focus firms respond differently to revenue decreases, then  $\alpha_4 + \alpha_5$  should be significant.

# Sample

Estimating my model requires two types of firms: control firms and government suppliers.

Prior work has assumed that the largest dollar suppliers to the government are most affected by government rules. However, the largest suppliers may not be unduly influenced by their government contracts. Ex. Proctor and Gamble and toothpaste.

My sample overcomes this potential problem by finding firms that have organization structures specifically associated with the government. These Federal Focus organizations believe that their government business is sufficiently important to design themselves around it.

I obtained my federal focus sub-sample by searching Compustat Segment for firms with segment names including Federal, Government, or Military.

# Sample Information

The Federal Focus sub-sample has 269 observations.

The control sub-sample 39,539 observations.

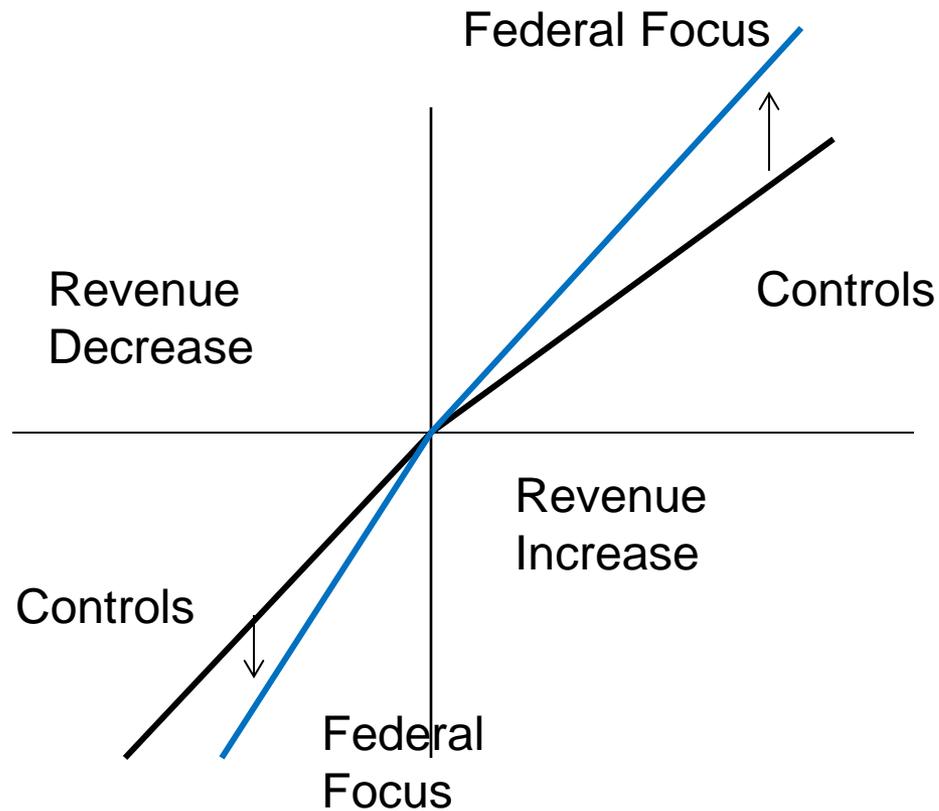
Even though there is a big imbalance in sub-sample size, the estimation yields significant, intuitive results.

Compared to control firms, on average, Federal Focus firms have

- similar asset values,
- more employees,
- greater SGA costs, and
- fewer revenue decreases.

# Results

Federal Focus SGA Costs are Sticker than Controls, consistent with greater dedicated fixed costs for contracting



Federal Focus SGA Costs increase more with revenue increases, consistent with greater fulfillment costs.



NAVAL  
POSTGRADUATE  
SCHOOL

# Economic Significance

Evaluating the results at the mean sample values.

A 1% increase in revenues (17.94 million) leads to an SGA cost increase of 2.30 million for control firms, and an increase of 2.75 million for Federal Focus firms.

Federal focus SGA Costs rise 0.45 million (19.7%) more than controls.

A 1% decrease in revenues (17.94 million) leads to an SGA costs decrease of 2.09 million for control firms, and a decrease of 1.48 million for Federal Focus firms.

Federal focus SGA Costs fall 0.61 million (28.9%) less than controls.

# Conclusions

Federal Focus government suppliers have different responses to revenue changes than other firms. These changes are large enough to detect in their published financial statements and are consistent with higher fulfillment costs and greater investment in fixed costs (ex. specialized government contracting staff).