IMPLICATIONS OF CONTRACTOR WORKING CAPITAL ON CONTRACT PRICING AND FINANCING

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The Problem

Designing and negotiating fixed-price, sole-source procurement contracts that motivate desired contract outcomes require an understanding of how fee structures and contract financing influence a contractor's return on equity.

The average customer trying to buy a common commercial product has the benefit of market-based intermediation for discovering prices or accessing purchase financing, such as leasing. In contrast, most large government acquisitions are done through negotiated sole-source firm fixed-price contracts where prices are based on the estimated cost of the item to be procured. Although the contractor often has an informational advantage on the item's cost, the government has an advantage by its ability to finance its purchases at a lower cost than all private financing.

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Fee Structure and Contract Financing: Complementary Profit Policy Levers

Government procurement price negotiation is backed up—ideally—with a mutual understanding of what the item should cost to produce and government profit policy to guide fee structure and contract financing decisions. Profit policy has two main levers: contract fee (stated as a percentage of cost) and contract financing. The weighted guidelines method outlined in section 215.404-71 of the Defense Federal Acquisition Regulation Supplement (DFARS) provides a structured approach for determining the fee that should be paid to a contractor based on the expected effort and level of financial risk. Financial risk is based on the type of contract (fixed-price or cost-reimbursable), amount and type of contractor capital required (working vs. facilities), and the source of contract financing. The guidelines distinguish between different levels of government contract financing: private financing from the contractor, progress payments, and performance-based payments. Progress payments cover up to 80 percent of the incurred costs for partially completed work that is invoiced on a recurring short-term basis. Even with contract financing, a contract has a growing working capital balance that the government pays upon completion.

Profit policy has a dual role: to motivate contractor performance and to encourage and compensate contractors for putting capital at risk. Designing contracts to motivate desired outcomes is fraught with agency problems, such as adverse selection and

moral hazard. The profit policy and other contracting rules aim to provide officials with tools to augment negotiations on cost and requirements. It is also important to maintain the long-term health of the defense industrial base because it is paramount to implementing defense policy. A "Goldilocks"—or "just right"—policy would provide sufficient, but not excessive, compensation for defense industry investment.

Why are fee structures and contract financing so important, and how are they related? The contract fee less non-reimbursable expenses is the contractor's profit. The contractor's shareholder value of that profit depends on how much of its equity was required to fund the contract execution. The important metric is the contractor's return on equity (ROE). Contractors can increase ROE by increasing profits, which can be very difficult to do, or by reducing the amount of equity needed. Debt is a common equity substitute, but it comes at a cost and with risks. The act of substituting debt for equity is to create leverage that effectively boosts ROE.

What Is the Relationship Between Leverage and Margin for a Firm?

Debt provides leverage that effectively boosts the profitability of a company when compared to its peers without debt financing. Technically, government-provided contract financing is a non-debt liability, but it provides the same leverage effect on equity returns. This is because contract financing allows a company to generate cash flows with much less capital than a firm without contract financing.

The Dupont formula can be used to better understand the relationship between the firm's ROE (and ultimately the firm's value to shareholders), its profit margin, and its capital structure (i.e., how much debt it holds). The formula is:

ROE = Return on Sales x Asset Turnover x Asset-to-Equity Ratio.[1]

Return on sales (ROS) is the profit margin ratio, while the latter two terms in the equation measure asset efficiency. Fewer assets with the same revenue improve efficiency, as does more debt with the same asset level. Figure 1 shows how a firm, with the same profit margin and asset turnover but two different capital structures, can have vastly different ROEs. On the right hand side of the chart, the firm has a high debt ratio and enjoys much higher ROE but at a greater risk of bankruptcy than it does on the left hand side with a low debt ratio.[2] This is because debt acts as a fixed cost and can lead to bankruptcy if sales drop too much.

But government contract financing is not debt and does not pose the

[1] In terms of definitions, ROE (profit/equity) = ROS (profit/sales) x Asset Turnover (sales/assets) x Asset-to-Equity Ratio (assets/equity).

[2] Readers who own a house are aware of the concept of how debt provides leverage to boost equity returns. A house that is sold for $110,000 a year after being purchased for $100,000 has a before tax ROS of 10%. If the owner borrowed 80% of the initial transaction, he now has a return on equity of 50%. On the other hand, anyone who remembers the recent great recession should also realize that debt exposes the property owner to bankruptcy or foreclosure risk.

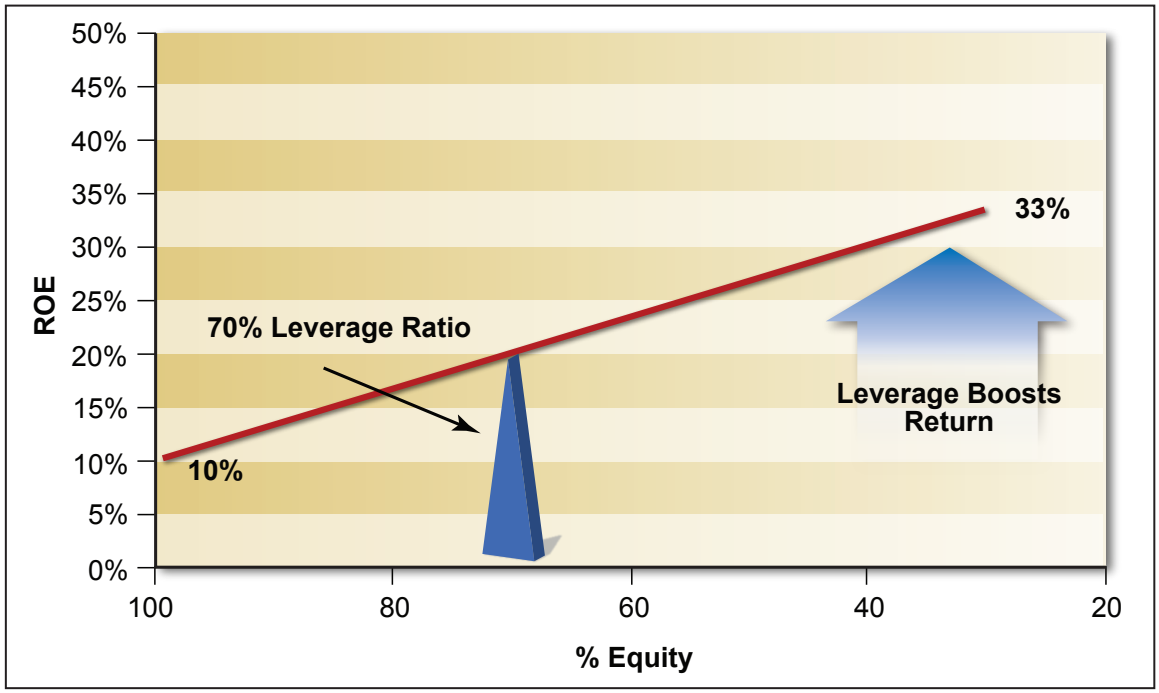

Figure 1. Comparison of ROEs with Two Different Capital Structures

same sort of risk to a contractor that uses it. Consequently, contract financing has the return-boosting leverage for equity but without the bankruptcy risk of debt—the implication being that this is due to the firm's ability to execute the contract without investing as much working capital as would otherwise be required. For example, assume a contract that costs $1 million to execute over the course of one year has a fee of 10 percent of cost, or about 9 percent ROS. If the firm had to borrow or use equity to pay for all of the materials, labor, and overhead, the ROE would be close to the ROS. But contract financing, such as bi-weekly progress payments, boosts the ROE for the same contract to about 68 percent.

Unlike most defense contractors, commercial industrials invest equity and debt capital into new plants, tooling, product design, and even dealer and customer financing in order to sell products. They might invest billions of dollars in a product before selling the first unit, but they generally have high profit margins that ultimately cover their cost of capital. A retailer by contrast, might not even own its inventory; rather, it uses customer and vendor cash to finance the cost of sales. Consequently, successful retailers have much less equity invested than industrials. Thus both types of firms can yield high returns with vastly different capital requirements.

Defense contractors share characteristics of both sectors: their products require large investments, but they can use customer funds to minimize equity and debt requirements. Most defense contractors have margins that are lower than commercial industrial firms but higher than pure retailers, and they have access to considerable government financing. In fact, contract finance can be so favorable that,

as Christopher Kubasik, former Chief Financial Officer of Lockheed, said, "working capital will continue to be a great contributor to our cash."[3] The implication is that Lockheed's contract finance is providing a high level of cash for the company, whereas for most manufacturing companies, working capital is not a source—but a sink—for a firm's cash level.

The top defense contractors have exploited this financing strategy successfully, particularly over the past 10 years, as shown in Figure 2. This chart shows the ROE and defense industry average cost of equity since 2004.[4] During the past decade, prime contractors have easily made returns that exceeded their cost of equity. Yet at times, the defense industry will try to argue that single- or low- to-mid- double-digit percentage of cost contract fees provide insufficient returns when compared to other industries.[5] Focusing on margins and ignoring the power of contract financing provided by the government is misleading. Defense contractors have provided excellent shareholder returns, even though many of their contracts have single- or low double-digit margin rates.

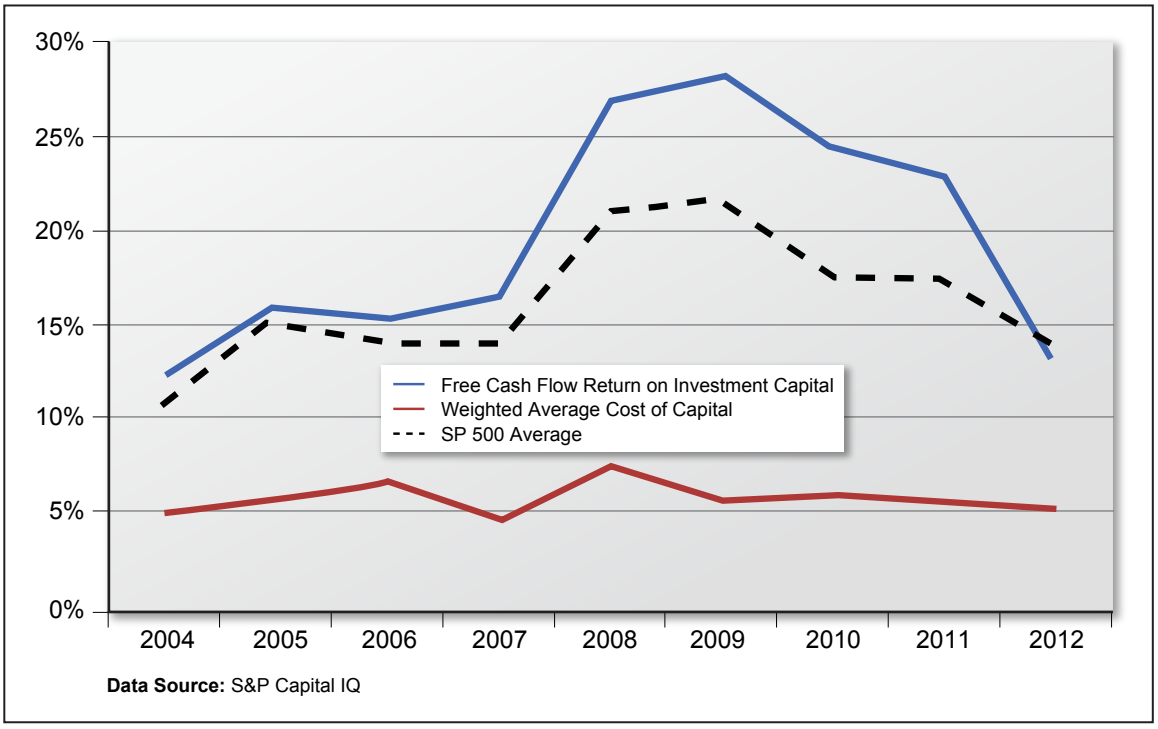

Figure 2. Defense Contractor ROE vs. Cost of Equity Since 2004

[3] Christopher Kubasik made this statement during the third quarter 2006 earnings conference call. Working capital is invoiced sales that have not yet been paid, plus the cost of finished goods and work-in-process inventory, less what is owed suppliers.

[4] The industry is defined here as the top prime contractors: Lockheed Martin, General Dynamics, Raytheon, and Northrop Grumman. Boeing is excluded because it derives half of its revenue and earnings from commercial aircraft.

[5] Aerospace Industries Association, "Assessing the Health of the Defense Industry," 2005.

What Is the Relative Benefit to the Government of Using Financing or Fee?

Organizations must understand their relative advantages when it comes to financing. Just as large volume retailers use vendor, and in some cases customer, financing as leverage to boost earnings on low margins, the U.S. government has crafted financing policy to allow contractors to use contract finance at the cost of receiving lower profit margins.

At the top level, the Office of Management and Budget dictates that the discount rates used in financial decisions reflect the government's opportunity cost of capital. This policy ensures that decisions involving financing, such as a long-term lease, are biased away from using private financing. The DFARS also appears to provide a bias toward using government contract financing in lieu of contractor financing.

Consider the problem of financing working capital, which is the funding required to cover the contractor's operating cost until the sale is invoiced and paid. Without progress payments, contractors require enough working capital to cover the cost of executing the contract until it is finished and payment is received. Progress payments allow the contractor to receive partial payment every two weeks, and drastically cut the amount of capital the contractor must put at risk. Because government contract financing is a partial payment system, contractors must still fund at least 20 percent of the contract cost. This means that the longer the contract, even with progress payments, the longer the contractor must tie up its working capital and the higher the financing cost.

The relationship between the amount of fee required in order to cover financing cost and the progress payment rate is shown in Figure 3. Each line shows the minimum fee given the progress payment rate and contract term lasting from one to five years. In this case, the contractor is assumed to have a cost of equity of 10 percent. The slopes of each line represent the marginal amount of fee reduction possible for a unit increase in the payment rate.

The DFARS profit policy provides two guidelines to cover contractor financing cost. One is the working capital adjustment, which is tied to the progress payment rate, the length of the contract, and the prevailing interest rate; the other is a fee to cover "contract risk." Figure 3 shows the projected working capital adjustment, which assumes a 6 percent interest rate, as a blue trapezoid. The wedge thickness is bounded by contracts lasting 12 months on the bottom and 60 months on the top. Only at high progress payment rates does the working capital adjustment cover contractor costs. Contractors choosing to use their own capital are not fully compensated by the policy guideline fees.

The DFARS guidelines for "contract risk" also indicate that the government is biased against using private capital. For contracts without contract financing, the normal contract risk fee should be only two percentage points higher

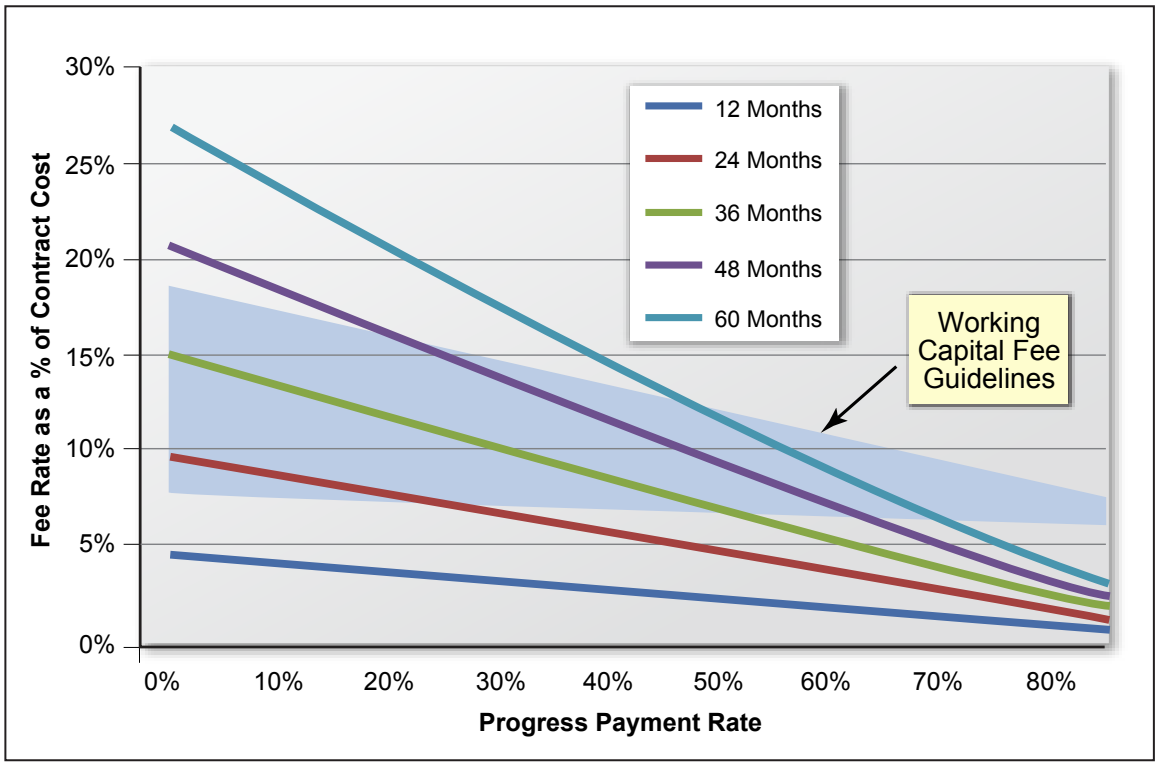

Figure 3. Minimum Working Capital Fee vs. Progress Payment Rate (Lines) and the Working Capital Adjustment Guidelines in DFARS 215.404-71-3 (blue trapezoid)

than for contracts with progress payments. One can infer the contractor's financing cost from Figure 3. For a given contract term, it is the difference between the fee at 80 percent progress payments and at zero percent progress payments; in all cases, it appears to be well in excess of two percentage points. Thus, contractors, particularly with long-term contracts, should prefer to use government contract financing.

Conclusion

Generally the government has a difficult problem negotiating cost-efficient sole-source procurement with fixed-price contracts. The contractor has an informational advantage on the cost of the contract that it may be able to exploit to gain higher profits than it might expect in a competitive market. It appears, however, that the government has developed a sound fee policy when it comes to contract finance. Clearly the government should use its long-established low relative financing cost to its advantage and lower its contracting costs.

This does not mean that the government should completely finance fixed-price contracts the way it does cost-reimbursable ones. By requiring the contractor to put some capital at risk, the contract has an embedded incentive to be completed as soon as possible. Furthermore, holding back some of the payment helps provide

some surety protection that the contractor will complete the contract under its ceiling. But in spite of the low government financing cost, certain contractor financing structures have allure for government agencies that are underfunded. These structures often have high implied interest rates but allow agencies to make acquisitions without direct congressional appropriations. The government should maintain its discipline on this front and consider ways to better coordinate fee and contract financing policy across all agencies.

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