

# Risk in Fixed-Price Contracts

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Current federal policy expresses a strong preference for fixed-price contracts in federal contracting. Firm-fixed-price contracts are depicted as existing on the extreme left of the continuum of risk. As we progress through the various fixed-price flavors and into cost-type contracts, the assertion is that risk shifts from the vendor to the government. We even describe contract types on the extreme right (e.g., labor hour and time and material) as “high risk.”

While, on the surface, this assertion appears reasonable, we do ourselves and the taxpayer a disservice when we couple this belief with the assumption that there always exists goodness in shifting risk to the vendor. Cost, schedule and performance risk are only three of the characteristics of an acquisition approach that source selection authorities and the contracting

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# Report Documentation Page

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professionals supporting them must consider in selecting vendors and the underlying contract structure.

Two of the weaknesses in the processes that lead to government contracts are a much too simplistic view of the concept of uncertainty in government contracts and the universally shared misuse of language that has evolved as a consequence of this overly simplistic view. Uncertainty is an extremely complex concept. In the absence of omniscience, efforts to predict to any useful degree of certainty what events will have an effect on your contract and whether they will occur are exercises in futility. Nonetheless, we cannot wait for things to happen. We have needs that exist today, so we act and make our best guesses about future events.

Sadly, the common practice is to consider the terms risk and uncertainty as synonymous. They are not. We call the thought processes that surround considering uncertainty “risk analysis” and the efforts to combat the potential negative effects of uncertainty “risk mitigation.” You could fill a library with the publications that use these terms in this manner. We have official publications on the topics and even statutes that prescribe how we go about risk analysis and risk mitigation. This general misuse of terms and the practice of placing all things associated with the concept of risk in one basket obfuscate the specific consequences of our actions. We fail to realize that efforts to reduce or mitigate one aspect of risk often will have undesirable effects on other aspects.

A universally accepted definition of risk and the related terms does not exist. For the purpose of this discussion, we shall adopt the terminology offered in the *Risk Management Guide for DoD Acquisition*, Sixth Edition. The *Guide* acknowledges

three flavors of risk: cost, schedule and technical performance. These three flavors correspond to the cost, schedule and performance objectives of the acquisition. What the *Guide* does not do is suggest that the three flavors of risk are interrelated. The *Guide* treats them as three separate components, each to be addressed separately. The question at hand is, “Do our efforts to reduce or mitigate one component of risk have a counterproductive effect on another?”

In the discipline of project management, the concept of the “Triple Constraint” or “Iron Triangle of Project Management” appears to be universally accepted. Any change in one of the three constraints (cost, schedule and scope) is expected to have an effect on one or both of the others. The “Iron Triangle” is a good analogy and construct for cost, schedule and technical performance risk in acquisitions. When we take action to reduce cost risk, for example, our efforts will adversely affect schedule or technical performance risk.

The firm-fixed-price structure is touted as the approach to shift (cost) risk from the government to the contractor. But is this the whole story? A firm-fixed-price contract clearly reduces price uncertainty. The government will pay the pre-negotiated price and no more, although it may pay less in the event of a termination. The prudent contractor, however, will consider the uncertainty of his final cost and adjust his final offer accordingly. The contractor who consistently assumes all of the cost risk is not likely to be in business long. Some of the cost risk must be shifted back to the government in the form of a price premium for vendors to survive. Though opinions vary, large fixed-price contracts tend to include a 10 percent to 15 percent—maybe as high as 20 percent—price premium. From the perspective of industry, this is quite reasonable: These high

**Table 1. Comparison of Major Contract Types**

<b>Contract Type</b>	<b>Principal Risk to be Mitigated</b>
Firm-Fixed-Price (FFP)	None. Thus, the contractor assumes all the risk.
Fixed-Price Economic Price Adjustment (FPEPA)	Unstable market prices for labor or material over the life of the contract.
Fixed-Price Incentive Firm Target (FPIF)	Moderately uncertain contract labor or material requirements.
Fixed-Price-Award-Fee (FPAF)	Risk that the user will not be fully satisfied because of judgmental acceptance criteria.
Fixed-Price Prospective Price Redetermination (FP <sup>3</sup> R)	Costs of performance after the first year because they cannot be estimated with confidence.
Cost-Plus-Incentive-Fee (CPIF)	Highly uncertain and speculative labor hours, labor mix and/or material requirements (and other things) necessary to perform the contract. The government assumes the risks inherent in the contract, benefiting if the actual cost is lower than the expected cost, or losing if the work cannot be completed within the expected cost of performance.
Cost-Plus-Award-Fee (CPAF)	
Cost-Plus-Fixed-Fee (CPFF)	
Cost or Cost-Sharing (C or CS)	
Time & Materials (T&M)	

Adapted from “Comparison of Major Contract Types,” Acquisition Community Connection, DAU

premiums are necessary to offset those fixed-price failures—i.e., when cost estimates are low and a contract win results in a corporate loss.

Even this premium does not account for all of the cost risk. Some of it is shifted to schedule or technical performance risk—e.g., the likelihood that the contractor will ultimately default increases. It is beyond human capability to quantify these shifts, so a totally objective business case analysis is not possible. The best we can do is to make an informed guess. We ultimately must rely on judgment. If we perceive that the value of reducing price uncertainty exceeds the requisite increase in schedule or technical performance uncertainty, then a firm-fixed-price structure is justified. However, one must be fully aware that a fixed price does not “reduce” total risk; it simply reallocates total risk among its constituent elements.

In deciding on a contract structure, we rely heavily on the experience and expertise of our contracting professionals. It is, however, unreasonable to assume that contracting officers are omniscient and experts in risk management. In the process of choosing between a fixed-price and cost type contract, many of the factors that go into the “total risk” analysis are unknown or unknowable. Furthermore, in times of diminishing budgets, it may be highly desirable to be able to reduce uncertainty about the price the government is to pay. Nonetheless, defaulting to a fixed-price structure occasionally may have undesirable consequences. DoD acquisition history is replete with examples of fixed-price failures, the most notorious examples being the C-5A Galaxy in the 1960s, the C-17 Globemaster and the A-12 Avenger in the 1980s and the KC-X of this decade. These failures all share three characteristics: They were high-dollar efforts, truly developmental in nature and involved an industry with a limited number of players.

The lessons of the first three appear to have been the impetus for the prohibition on fixed-price developmental contracts codified in the 1988 National Defense Authorization Act (NDAA). Nonetheless, a mere 2 decades later, Congress reversed itself in the 2007 NDAA, which appears to have set the environment that nurtured the difficulties facing the KC-X. History repeats itself. If nothing else, the fixed-price structure appears to have limited the number of competitors.


Cost type contract structures have undesirable characteristics—they require greater government oversight and increase government administrative costs as well as the possibility of ending up with nothing. The contracting officer must consider these factors in the decision on contract structure. However, the contracting officer also must not go blindly onto the path of fixed price without considering that a fixed price may reduce the uncertainty of the acquisition in one area but increase it in others. Referring again to the A-12, the government believed that the firm-fixed-price structure was a “safe” choice and allowed the government to hold the manufacturer’s feet to the fire. However, the fixed-price structure significantly contributed to a multibillion-dollar loss

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for McDonnell Douglas and General Dynamics and decades of litigation. With the advantage of hindsight, we see that a cost type contract would likely have been the safer choice.

The decision is even more critical in an environment of emerging requirements, the dreaded requirements creep. Federal contracting again is replete with examples of changing requirements leading to change orders with cost estimates that give us pause. Sad to say, only hindsight offers the wisdom necessary to select the best contract type.

For commercial items under Federal Acquisition Regulation (FAR) Part 12, we are hard pressed to give examples where the government would not be best served by a fixed-price contract, but once you leave the commercial arena and move into the realm of nondevelopmental or developmental items or services, the line between fixed and cost type contract becomes much fuzzier. Even independent analyses by highly qualified cost analysts are only as good as the quality of our assumptions. When uncertainty is high, the right contract type is unclear. As a profession, we must document our assumptions and conduct “sensitivity analyses” of these assumptions to understand the impact of when (not if) one or more of our assumptions prove to be wrong. I would postulate that across the profession, particularly if the contemplated contract structure is fixed price, the common practice is to do neither.

There is nothing in the FAR or its supplements that prevents contracting officers from selecting the best contract type for a given acquisition, although some atypical choices may be more administratively challenging than others. This article is not a call for policy changes. It is, however, a plea for the acquisition community to accept the assertion as axiomatic that the most obvious contract type may not be the best type. Don’t blindly accept the claim that fixed-price contracts expose the government to the least risk. That assertion simply is not true. 

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